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# ***JPRS Report***

## **Soviet Union**

### ***EKO: ECONOMICS & ORGANIZATION OF INDUSTRIAL PRODUCTION***

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### **Soviet Social Development Advances**

18200005a Novosibirsk *EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO)* in Russian No 8, Aug 87  
pp 3-19

[Article by P. G. Oldak, doctor of economic sciences, Novosibirsk State University: "A Qualitatively New State in the Development of the Soviet Society"; a discussion]

[Text] A most important result of the period that has passed since the 27th CPSU Congress is the recognition that restructuring is a considerably more complicated task than it was thought to be at the beginning of the path. Regardless of how difficult technical and economic problems may be, the greatest problems lie in the sphere of social relations. It would be necessary to overcome the inertia of the existing social structures and to open up the way for the dynamic forces of society. Life itself brings the analysis of social processes to the forefront of modern economic research.

It seems to us that the following are the key problems today:

- the determination of a new type of realization of socialist production relations;
- social demarcation, the conflict of the new and the old;
- the requirement to pass through the "neutral strip" more rapidly;
- overcoming "sluggish running," changing over from the principle of "unsinkability" to competitiveness.

There is hardly a single author who is capable of elucidating these issues completely. The theoretical stockpile of our economic science is clearly inadequate. It would apparently be more feasible if one person were to provide the initial statement of the problem, someone else were to interpret, develop, and deepen the positions, and someone else were to formulate sufficiently complete ideas. We shall be so bold as to pose certain problems.

### **Determination of a New Type of Realization of Socialist Production Relations**

The 27th Party Congress earmarked a new course in the development of the Soviet society which is designated by such concepts as acceleration of socioeconomic development, restructuring, changeover to modern forms of management, the establishment of a new style of life, and the achievement of a qualitatively new condition of the society.

It is known that the first stage in the development of the socialist society was defined as a transition period from capitalism to socialism. In our country its completion dates back to 1936 with the adoption of the USSR Constitution. More than 50 years have passed since then. Can one assert that this half-century encompasses a quite

definite period in the development of the socialist system which is now being completed and we are changing over to a qualitatively new stage? We think that one can.

The difference between the transition period and the one that has replaced it is determined by the structure: a multistructured economy with a prevalence of small business was replaced by the socialist method of production. The model of the construction of the socialist society that took form in the 1930s was the only possible one for a long time. But time passed and there were changes both in the society itself and in the nature of its problems. Today it is sufficiently clear that in those days they chose one of the possible models of realizing socialist production relations. This model was adequate to those conditions of the development of the USSR in which the new society was established. We understand this to be the first preparation for the inevitable military conflict with the forces of imperialism.

Typical features of this model:

- a high degree of centralization of management of all spheres of social life and particularly the economic sphere—direct, specific development of the national economic plan from above to below with respect to all the basic indicators;
- an essential limitation of the forms of cooperative business (the cooperative-kolkhoz form was recognized and supported but was limited, consumer's cooperation was limited, and then industrial cooperation was eliminated);
- accelerated surmounting of presocialist forms relying on administrative methods (which was dictated by the lack of confidence in their loyalty in the event of a sharp conflict).

One can see the immense significance of the fact that we were able to rely on this model during the period of the Great Patriotic War. It played an important role in the years of the postwar restoration of the national economy as well.

But the picture changed after that. Socialism overcame and was victorious. A world socialist system arose and became established. The extreme conditions of the 1930's-1950's were replaced by a new time whose most important characteristic was the development of the scientific and technical revolution and the growing significance of the human factor (mobilization of creative activity of all levels of the national economic complex).

Under the new conditions the results of the existing type of construction of socialism (with a predominance of administrative methods of management of social development, above all the development of production) began to decline. The latter was reflected in the following kinds of negative processes:

- the gradual changeover to "sluggish running";
- the lack of a basis of strict competition could be felt,

nothing threatened to "withdraw the enterprises from the games," and therefore it was not mandatory to advance with the maximum speed;

- growth of elements of a free-ride mentality, which is closely linked to the fact that the state guaranteed to cover any losses and to write off credit that had not been paid back. Thus the Samarkand Refrigeration Plant alone in 1985 "produced" about 5 million rubles in losses, and the scale of the free-ride attitude of all similar enterprises reached 6 billion rubles;
- the growing regimentation and regulation which became almost insurmountable obstacles to the viability of the business. According to calculations of specialists, even in 1985 there were 23 administrative "wrongs" on the ladder from the upper stage of management of agriculture to the field and the milk-maid;
- the endless paperwork, which frequently covered up incompetence, a lack of initiative, and bureaucracy. Thus the USSR People's Control Committee inspected to see how the Ministry of Tractor and Agricultural Machine Building was fulfilling the decree of the CPSU Central Committee concerning serious shortcomings in the arrangement of statistical accountability. It turned out that it not only had not taken resolute measures to reduce accountability, but had introduced an additional 43 forms since the beginning of 1986. Each year enterprises of the branch were forced to report on an average of 159 forms which included 117,000 indicators. And it was not even a matter of the money that was lost, but that this "tide of paper" blocked movement forward.

The historic significance of the 27th CPSU Congress lies in the fact that it formulated the course toward changing over to a new stage in the development of socialism and a new type of realization of socialist production relations. Thus the period between the 1930's and the 1980's is marked as the second stage in the construction of socialism in the USSR, and the achievement of a qualitatively new condition of the Soviet society is designated as the changeover to the third stage. The changeover to the third stage, that is, the new type of realization of socialist production relations is a persistent requirement of the time and an overall pattern in the development of a socialist society. The leaders of many socialist countries are discussing the need to make socialism stronger, to make it develop more dynamically and compete successfully with the capitalist society.

### **Social Demarcation and Conflict Between Old and New**

The movement toward the third stage can be noted in all socialist countries. Some have achieved great successes, others—less. But it is not proceeding simply in any of them. Why? In particular, because this changeover means a breakdown of existing social institutions and involves the position of those who are at the helm at

various levels of management, and it influences the implementation of decisions that are made by accelerating or retarding the rates of restructuring.

The period since the 27th CPSU Congress has unfolded before us as a unique and in a certain sense unforeseen time of development that is characterized by a sharp conflict between two opposition tendencies—the course toward restructuring and the inertia for retaining previous forms and lifestyle. There is a struggle to reduce the time necessary for entering the technological age of the 21st century, for our position in the world, for a strong and dynamic socialism, and for raising the standard of living of the population. The party course has received broad support from the people. But it is opposed by the clearly underestimated force of inertia, "the swollen, sticky force of complacency." This includes backward thinking, the force of habit, psychological difficulty, the changeover from "sluggish running" to running at full speed, and the preservation of archaic instructions that continue to determine the functions of planning agencies, ministries, and departments. As a result, the new gets stuck against the old and the qualitative changes that would strengthen the tendencies of accelerated growth have not yet taken place.

The new features of the development of social processes require explanation. We have become accustomed to interpreting our social development as some kind of steady advancement without stops or jumps. It has been assumed that in a socialist society everyone gains from progress and this means that they do everything possible to accelerate this movement. Difficulties are linked only to the time lag in increasing productive forces. But life has shown that if there is not a constant renewal in a socialist society clots and stagnation appear and economic and social problems can reach the danger point.

One of the most outdated dogmas that have blinded our eyes is the idea that under socialism there is no place for social conflicts, there is no struggle of opposing social forces, that there are no declines or situations which require a revolutionary breakdown of existing forms.

Let us try to figure this out. A society is a mobile social structure, and one might say that it is always in a process of renewal. Today the development of internal processes within it (both at the world and at the national level) proceeds very quickly. Hence the significance of developing correct scientific ideas about society has increased sharply.

Marxism singles out classes as the main social forces and development. The struggle of the leading classes determines the changeover to a higher historic stage of development. Thus we began to perceive history in the form of a regulated process. But we must be aware that we are looking at "giant steps" of history here. Class relations are deep and they reflect long-term characteristics of social structures (the type of socioeconomic formation).



If one were to change the scale of the measurements and consider not epochs, but individual countries within the framework of the life of one generation or shorter periods, we would see not only classes (deep forces), but also a very complex, mobile picture of the upper layer of social processes. In our society this is a conflict of the forces and interests in the formalized structures: enterprises and associations (local interests), ministries (departmental interests), and oblasts, krays and republics (local territorial interests).

And so there is the class axis, the fundamental one of the social structure. But there are also other axes. We shall now see the growing significance of demarcation, which is determined by the type of social thinking and behavior. Everyone in our country is in favor of restructuring, but in different ways: some are in favor of a radical restructuring in the society as a whole and at their workplace; they have become bogged down in old forms and today are willing to take on greater responsibilities; others are in favor of restructuring in principle (in the society), but are resolutely against changes in places where they have become entrenched, and at any price they sweep away everything that encroaches upon their privileged position.

The demarcation that has been noted, in our opinion, is not at all the result of any mistakes of the past which can simply be rectified and then everything will go well. The struggle between the energetic and the inert, the dynamic and the conservative, is a radical axis of social demarcation under the conditions of the new system. The socialist society overcomes the antagonistic contradictions but it does not remove the laws of dialectics, the law of unity and the struggle of opposites. Social development by its very nature is a struggle of social forces in which nothing can win out forever. Each generation determines its ideals anew and defends them. It can establish and develop the conquests of the fathers and grandfathers or it can lose them. The tasks of the present generation of builders of socialism is in some senses simpler and in some senses more complex. There is no need to win political power, to expropriate the exploiting classes, to bring the country up out of ruin, and we hope that we will not have to wage war. But it is necessary to learn to solve technical and economic problems just as well as capitalist firms do, and national economics and social problems—considerably better.

M. S. Gorbachev says: "Our transformations and reforms that are earmarked in the decisions of the April Plenum of the Central Committee and the 27th CPSU Congress are a real revolution throughout the entire system of relations in the society, in the minds and hearts of the people, in the psychology and understanding of the modern period and, above all, in the tasks generated by the turbulent scientific and technical progress." (Footnote 1) By defining the restructuring of the revolution we significantly expand the idea of the nature of the development of social processes in a new society and recognize that its institutions, which originated in one period

of development or another, retain their progressiveness within strictly given time limits. Beyond these limits they grow old and degenerate. Therefore we learn to make continuous adjustments in existing forms in keeping with the changing situation or we will be forced to periodically carry out a revolutionary breakdown of outdated forms.

It should be emphasized that we are speaking about a special kind of revolution. It is initiated from above and is resolutely supported by the broad segments of the population and is directed against those who resist the implementation of a new course; a merciless war is declared by those who have turned the imperfection of the selected forms to their own benefit, present-day NEP men, and underground dealers and speculators.

That is not all. The peculiarity of this revolution lies in the fact that it is passing through every enterprise and institution, every building, and it is directed against the inertia, weakness and laxity that have accumulated within us and around us, and also against direct sloppiness. The time has come for composure, creative search, and bold and energetic actions. Since this is a revolution within us ourselves, it begins with restructuring our awareness. Hence the large and responsible role for social scientists.

### Passing Through the "Neutral Belt" More Rapidly

The 27th Party Congress called for changing from a rigidly centralized system of management (direct address planning) to a flexible combination of a centralized basis and self-management. Some time ago they summed up the results of the large-scale economic experiment which lasted for more than 2.5 years. Under the conditions of the experiment they managed to increase the responsibility of enterprises and associations for the fulfillment of product deliveries in keeping with the orders of the consumers; to carry out plans with a smaller number of personnel; and to increase the enterprises' independence in the utilization of funds for the development of production and material incentives. But, unfortunately, there were no radical changes in the acceleration of the growth rates of production, the technical reequipment of the enterprises, or the improvement of product quality.

Practice has confirmed that which was not difficult to predict: a partial restructuring could lead only to partial success. The national economy is a complex and integrated structure. An enterprise is not a unit which at the entry, within or at the exit is "bound or rebound" by a multitude of relations: it is a formed system of planning whereby unjustified regulation and excessive supervision flourish; it is a system of material and technical supply and sales that does not allow the enterprise to select contracting agents, placing the focus on product

quality and strict observance of contractual delivery; it is a finance-credit and price-setting system that lags severely behind the times; and it is a position among associated branches.

It is impossible to obtain a qualitatively new result by partially changing the conditions for financing and material incentives within the framework of the outdated economic mechanism. A radical restructuring is needed throughout the entire system of management of the national economic complex. In our opinion, the general pivotal point lies in this multifaceted task. We are speaking about changing over to a new and higher model of the construction of the national economic plan. The fact is that until quite recently we have tried to realize the idea of all-embracing management of public production. Public ownership of the means of production was interpreted as a prerequisite that opens up the possibility of all-encompassing, intercoordinated management of the national economic complex from a unified center. The model of direct address planning was a form of realization of this idea.

Experience showed the limited nature of the initial statement of the problem: after all, the national economy is an exceptionally complex and mobile system. The desire to resolve all key issues in the development of the branches, regions and enterprises within central economic departments inevitably led to an overgrowth of their apparatus, a reduction of efficiency and effectiveness of decisions that were made and, which is even worse, to a loss of initiative of all levels of the national economy. The press is full of examples that confirm this idea. It is clear that it is time to change not various individual methods, but the very principle for solving the problem.

How should it be changed? In our opinion, through the principle of echeloned program management. The national economy is envisioned in the form of a multi-stage pyramid within whose framework both nationwide and numerous isolated (branch, regional, local) problems must be solved. In order to successfully perform the dual function it is necessary to provide for:

- priority of solving nationwide problems;
- independence of each block in solving isolated problems.

In other words, the national economic plan should include not plans for the operation of branches and regions, but only assignments for their participation in the achievement of nationwide goals. Analogously, the plans of branches and regions should include plans not for the operation of production subdivisions, but only assignments for their participation and programs for regional and branch development. There is an essential difference. In the former case the plan includes all the most important parameters of the activity of the enterprises and in the latter—only those that are contained in

the plan-contract (technical specifications of the product, production volume, time and conditions for deliveries, and price). The remaining items are given by legal and economic normatives (laws regulating labor relations and conditions for the utilization of nature, payment for funds, payment for the utilization of natural resources, interest on bank credit, normatives for the distribution of profit, and so forth).

In keeping with the principle of deaggregation at the upper level (in the USSR Council of Ministers and Gosplan) it is necessary to develop programs that realize nationwide goals (structural rearrangement of production, defense, solutions to social problems, and so forth). The center determines the priorities for the distribution of natural resources and legal and economic normatives for management.

We have already begun to construct the upper level of the national economic complex according to the model of program management. We have created six inter-branch administrations that are responsible for implementing target programs: Gosagroprom, the Machine-Building Bureau of the USSR Council of Ministers, the Organizing Bureau of the Country's Fuel and Energy Complex, the State Construction Committee, the State High Economic Commission of the USSR Council of Ministers, and the Social Development Bureau of the USSR Council of Ministers. Now, as of the beginning of 1970, it seems reasonable to create a transportation committee, an education committee, and a committee for control of the utilization of nature. There is a quite crucial task of developing new functions and status for the Gosplan, Gossnab, State Committee for Science and Technology, State Price Committee, and also the ministers. Otherwise the restructuring will not produce the expected result.

The new model for management presupposes the creation of a self-adjusting economic mechanism: self-management of enterprises; wholesale trade in means of production; prices that reflect the level of socially necessary expenditures of production and the amount of known demand; finance under plans and self-financing; strict repayment of credit, and so forth. It will be necessary to learn to continually adjust this mechanism and work within its framework. The task is extremely complex. Practically all of 1986 went for preparing for a large-scale changeover to the new conditions of management. In January 1987 we began to work out the most important areas of the new economic mechanism. What were these areas?

First—the number of indicators of direct, address planning is reduced and the main indicator becomes 100 percent fulfillment of contractual commitment; many previous directive indicators have been transferred to the ministries, departments, and union republics for planning or directly to the associations and enterprises;

the state plan includes only the most important indicators, limits, and normatives that provide for truly centralized management of the economy.

Second—improvement of product quality and their ability to compete, and state acceptance of products. The state does not need poor-quality products and will not accept them.

Third—realization of the fundamentals of authentic cost-accounting, self-financing, and self-support. Live industrial union ministries and certain large associations and enterprises of other ministries and the ministries of the maritime fleet and trade are being changed over to the new conditions for operation. The basis for the development of plans for the output of consumer goods, their assortment, and their quality will be orders formed taking into account the results of wholesale trade fairs.

Fourth—the creation of scientific production associations and combines that make it possible to have integrated management of the system of “scientific developments—production (including processing of products)—sales.” In particular, the agroindustrial complex has clearly demonstrated the high results of combines that join the complete cycle together—from the production to the sales of products—on the basis of cost accounting and self-support. A government decision has been made concerning the creation of 14 combines like the large Kuban Combine, which includes Agroprom services, and enterprises of state trade, public catering, light industry, and automotive transportation. These combines will have the right to independently create production, procurement, and construction subdivisions. Their procurement volumes will not be established for them. After they have fulfilled their commitments for deliveries to the unionwide and public funds they will dispose of the remaining output at their own discretion. They will be able to establish their own prices and sell the remaining products through their own trade network without intermediaries.

Fifth—expansion of the rights of the enterprises to establish direct foreign economic ties. More than 20 ministries and departments and 70 of the largest associations and enterprises, beginning 1 January 1987, have been granted the right to carry out export-import operations directly (including on the market of capitalist and developing countries). As the appropriate prerequisites are created, the number of these ministries, organizations, and enterprises will increase.

Experience and the adjustment of levers for economic regulation of activity make it possible to provide a beginning for complete economic independence of enterprises and the achievement of social goals on the basis of contractual relations (agreement-contract for participation in the implementation of national, regional and branch programs, financing of enterprises strictly

according to contractual commitments, determination of contractual prices within the framework of the established normatives, and so forth).

### **Overcoming “Sluggish Running,” Changing Over From the Principle of “Unsinkability” to Competition**

The first task of restructuring is to define in a new way the tasks of management with respect to all levels of the national economic structure. This is a necessary but not an adequate condition. It is not enough to remove the forms that are impeding the establishment of the foundations of energetic qualitative growth. Something is also necessary—to create stimuli that provide strong motivation to move forward without slacking off. We are speaking about creating conditions which would open up the path upward along the social ladder (position, scope of activity, public recognition, earnings) to dynamic forces and at the same time would remove and “push” downward on the ladder all those who are not keeping up with the times or who have ended up in a management position merely by chance.

And so we have come to the question of the role of competition in a socialist society. World experience since ancient times (arts, sports, crafts) shows that this principle is universal and provides a solution to a triune problem:

- maximum activization of creative potential and physical and military qualities;
- change of leaders—advancement of those who have achieved the best results today;
- the creation of a situation wherein no past successes give the right to reinforce one's position.

Capitalist competition adds the feature of “survival of the fittest”—the dominance of the strong over the weak. While speaking out resolutely against the social motivations and methods of capitalist competition we shall not forget that it has a certain grain of rationality in it. (Footnote 2)

For a long time we have developed socialist competition as the antithesis to capitalist competition. There is no doubt that it plays a role in the development of production, provides an example, and mobilizes moral and material incentives for overfulfillment of plans. But still one cannot but see a certain limitedness in the results that have been achieved. Even in places where there is no formalism we have not managed to overcome the inertia and the lagging behind of weak units, nor have we managed to properly mobilize the creative activity of the workers. This means that more effective forms are needed.

Collectivism is a most important basis for socialist social relations. Today we are interpreting it in a new way. Collectivism should not be a coverup for a free-ride mentality or the right of the enterprise, regardless of the quality of its work, to maintain its position in society,

that is, the right to a certain "unsinkability." We are "divorcing" the concepts of "equality" and "leveling." Leveling makes everyone equal, everyone is guaranteed wages according to unified rates, regardless of the final results of their work. Equality is the equal right of everyone to fight for his position and the broad road of competition.

The competition must be given features that are adequate to the nature of the socialist system: winning should open up additional possibilities and provide generous rewards, but it should not reinforce people in a social status that provides them with various privileges and losing, in turn, should be accompanied by a changeover from a higher category to a relatively lower one. At the same time, the society must support those who have turned out to be weaker by offering them the opportunity to find their own place, but it should not take responsibility for supporting them or generate a free-ride attitude. Having provided for complete realization of the capabilities of both strong and weak workers, we will be able to unite justice and dynamism.

It is important to create conditions for competition in all spheres of socioeconomic activity. Then we will obtain a self-developing process, a kind of chain reaction of creativity. Subsequently it would be sufficient just to make sure that this process has not died down and has not gone beyond the boundaries of socialist norms of social life.

For the time being we are setting for ourselves a simpler task—self-support and self-financing of enterprises under the conditions of centralized supply and sales. The latter is explained by the fact that today many enterprises are not yet ready for economic relations that are based on competition. Approximately one-fourth of the associations and enterprises are unable to fulfill all the orders from consumers, and 13 percent of the industrial enterprises generally operate at a loss. But it would hardly be expedient to expect that all of them will come up to the proper level. Until we have developed competition the backward ones will maintain a position of "unsinkability" and there will be no strong motivation for restructuring.

Therefore it seems correct to divide all enterprises into three leagues—A, B and C. League A would include the enterprises that are ready for free competition on the domestic market and competition on the foreign market. They should be given equal rights to independent management: to conclude agreement-contracts with ministries and departments for participation in the implementation of national programs and they should be financed from the state budget in keeping with the commitments they have taken on. Beyond the limits of these fixed positions enterprises of League A could form a portfolio of orders with any legal bodies and foreign firms. State contracts would be concluded on a competitive basis. The portfolio of orders would be formed with the help of wholesale trade fairs and salon exhibitions.

Enterprises of League B are those that are operating without losses that are still not ready for free competition because of their high production outlays. They can be changed over to complete cost accounting and at the same time one can establish a time period within which the state will pay a subsidy for covering the differences between production outlays and the price. Since these enterprises do not receive profit they will have a fund for additional wages as well.

League B will include enterprises whose products do not meet the modern demands of the consumers. Under the conditions of free selection of suppliers they will be able to count on selling their products. Here another approach is expedient: representatives of the ministries in conjunction with the collectives of these enterprises consider the question of technical restructuring and changes in the profile of their activity. A time period is established within which the given enterprise must reach the level of League B. Collectives of enterprises of League C must have a clear understanding that their labor is not regarded as socially necessary and the society is temporarily supporting them, giving them a chance to rectify the situation. This is an extreme measure.

The fixed wage rates for management personnel and the ceilings on wages for workers of enterprises of League A should be significantly higher than for League B. The same thing can be said about the relationships among analogous indicators at enterprises of Leagues B and C. This approach raises certain barriers against the bad practice of "exploiting" socialism since, they say, in any case a collective will not end up in "disaster," regardless of how poorly it has been working. This still does not advance the requirement of clothing enterprises that are operating at a loss. But the collectives are placed in a qualitatively different position depending on the results of their activity; resources are concentrated in places where they produce the largest return; a time interval is established for rearranging the work of the backward enterprises. In our opinion, this is significant progress.

The points that have been noted give us justification to advance the following thesis: under modern conditions it is precisely in the sphere of social processes that major factors both of acceleration and retardation of development lie. Hence the special significance of analyzing these processes.

Everything we do or do not do is a selection of the present and the future. As long as the technological systems have been relatively simple and the scale of production relatively small, the initial postulate of economic science has remained in effect: public production is a process of transforming products of nature into economic goods. This was the end of it. Economists studied precisely this process and nothing else.

Today we can no longer stop here. Modern technological systems multiplied by the immense volume of production have led to a situation where public production has

acquired new characteristics. It is not only a process of transforming products of nature into economic goods, but at the same time a process that radically changes the very conditions for further development: the productivity of natural systems and conditions of habitation, man's place in the system of "machine-man," the role of the human factor and demands on it, the system of education, and value orientations.

How does one best utilize existing production resources? This traditional economic question sounds different today: how does one rearrange the structure of a national economic complex, production relations, and lifestyle in order to maximally mobilize the human factor, arrange the output of new generations of economic goods as rapidly as possible, occupy a worthy position in international division of labor, and at the same time maintain the full value of natural systems and the physical and spiritual health of the country's population?

This complex of problems cannot be solved within the framework of traditional economic research. They cannot be solved outside the analysis of economic processes either. It will be necessary to make the most significant changeover in the history of economic science from the statement of problems of management of public production to problems of management within the limits of the highest unity of all social ties (economic, social and natural economic).

Acting as coordinator for drawing up programs for the development of the national economy, economists essentially take on responsibility for the solution to a new class of problems. But so far they have not even been described with respect to the region or the country as a whole. It is necessary to develop both their theoretical base and methods for solving them. It is also necessary to have qualified personnel with solid economic, sociological and mathematical training and it is indispensable that they have a high level of general scientific education. We are still a long way from this. Here too it is important to overcome the "neutral belt" more rapidly, for without a larger stockpile of economic research it will be extremely difficult to solve the numerous new tasks that are generated by accelerated economic and social development.

### Footnotes

1. PRAVDA, 3 August 1986.

2. "The strong winds of competition" wrote well-known Swedish economists, "have hardened us, made us sturdy and strong, and also forced us to become innovators," see: Myrdal, G. et al., "Shvetsiya i zapadaniya yevropa" [Sweden and Western Europe], Moscow, 1964, p 34.

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**Invention Committee Chairman Interviewed**  
18200005b Novosibirsk *EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO)* in Russian No 8, Aug 87  
pp 21-29

[Interview with I. S. Nayashkov, chairman of the USSR State Committee for Inventions and Discoveries, by Ye. Temchin: "Invention: Problems and Prospects"]

[Text] [Question] The program of revolutionary socio-economic transformations of our society that was earmarked by the 27th Party Congress envisions the creation and utilization in the national economy of new technical equipment, technology and materials. But the only thing that is considered to be really new is that which is done at the level of effective inventions. Otherwise this is only a more or less successful combination of others' ideas and technical solutions.

[Answer] Yes, unfortunately not everyone on whom the fate of scientific and technical progress depends has mastered the simple truth. Frequently one encounters cases in which when beginning a new development the authors do not set for themselves the goal of creating it at a level that exceeds the best world analogues—at the level of inventions.

[Question] At one time I worked as a designer and I remember well the times when we were told: "Do not invent anything, take that which has already been tried. That is more reliable and faster." We read technical literature, took models that were prepared and produced by industry and copied them, trying to improve them in some way. This is called creating new technical equipment even though it was already initially old. We were following in others' footsteps.

[Answer] Two years ago a GOST went into effect which makes it incumbent on developers of new technical equipment to conduct patent research in all stages of planning, beginning with the preplanning period, when they draw a plan for scientific research and experimental design work [NIOKR] and ending with the release of the work. This research and the analysis of world achievements in invention thought that accompanies it make it possible to determine not only the expediency of including a specific theme in the NIOKR plan, but also fairly objectively evaluate the technical level and the innovation of proposed solutions when the work is already completed.

[Question] In order to meet all the requirements of the GOST it is necessary to have knowledge and skills in dealing with patent literature. Far from every developer of new technical equipment has this knowledge and experience. A struggle has now been waged against computer illiteracy. Do you not think that the time has come to begin general patent training as well?

[Answer] We think that in technical VUZes we should introduce a special course but not at a faculty level as is done in certain of them, but this should be a mandatory discipline. Perhaps there is some point in thinking about having diploma and coursework include patent research. A certain amount of experience in training patent workers has been accumulated by the TsIPK—Central Institute for Increasing Qualifications, that is operating within the system of our committee—we should take advantage of this.

[Question] I had occasion to visit the meetings of the committee where they considered cases of poor organization of patent and license work in certain ministries and departments. As inspections showed, in a number of NPO's of these ministries and departments patent and license work is practically not done, the patent services do not have enough personnel, and the qualifications of the workers leave something to be desired. On whom do you think that all this depends?

[Answer] Mainly on the manager, on their evaluation of the tasks of this service and, I would say, on the level and breadth of their understanding of the special role of patent services. We know of examples of good work on the part of patent and licensing services. There they create effective new technical equipment, patent their own technical solutions abroad, and sell licenses. Take the experience of the Institute of Electric Welding imeni Ye. O. Paton, the Leningrad Metallurgical Plant, Uralmash, Elektrosila, VNIIKriogenmash, and certain other production and scientific-production associations. Of course patent services do not create new technical equipment; this is the business of designers, technologists and scientific associates—all those who engage in it. But a highly qualified patent expert provides the creative technical equipment with all the necessary information about inventions in the world, he provides methodological guidance in the search for prototypes, and he participates in the evaluation of the technical level and the innovation of the development. But if as a result of the patent search and analysis there is the presumption that they have managed to create a new technical solution, then the task of the patent expert is to help the developer through all the rules of filling out an application for an invention and subsequently to conduct correspondence and negotiations with the board of experts. All this and many other things are included in the range of concerns of the patent expert. Moreover, a highly qualified specialist, when investigating the patent procedure and analyzing the so-called invention activity in the world, can give the developer of the new technical equipment a kind of prognosis, helping in the selection of areas for searching for new solutions. This is also an important part of the work.

[Question] It was this approach to the matter that I encountered at the Tallinn RET Production Association. They engaged also in predicting invention activity. Up until recently.

[Answer] Why up until recently? What do they do now?

[Question] Unfortunately. There the patent division was headed by an intelligent electronics engineer who in the past had been a designer of instruments and he was equally competent in engineering and patent issues. An analytical turn of mind enabled him to engage in prediction. He left the association and took with him his adviser, who is also a specialist of the highest class. Previously this service enjoyed great authority with the general director—he supported it in all ways but they promoted that general director and a new manager came to replace him. It became very difficult for the patent division to operate and friction arose with the management of the design bureau. The patent experts took an active position and intervened in the affairs of the designers, placing requirements on them so that every development included inventions whose effectiveness surpassed the world analogues, they evaluated new developments, and without their evaluation the design was not considered new—such was the policy that had been established in the association. Not everyone liked this policy, the more so since the new general director took a passive position and did not support the patent experts in their demands. I am telling this because I saw a living illustration of your idea of how much in the organization of patent services and the quality of their work depends on the attitude of the top manager of the plant or institute.

[Answer] Yes, if all that is true at the RET it is an example of the short-sighted position of the association's management. It is a shame that such things happen in a progressive ministry. A lack of understanding of the role of patent services and an underestimation of their activity in the process of creating new technical equipment cause permanent harm to technical progress, our state's priorities for new developments, and expert and licensing policy. This is quite inadmissible now when the country is faced with the task of decisively updating production and creating highly effective technical equipment and technology that are as good as the best world models.

The results of the inspections conducted by the committee show that in certain scientific research institutes and many industrial enterprises there are no patent services as independent subdivisions at all. Two or three people registered in the scientific information division or in some other division who have completed patent courses or the TsIPK help developers of new technical equipment to fill out applications, give advice on legal issues, account for inventions and from time to time engage in replenishing the patent fund—this is where their functions end. Of course the advantage from this work is not great.

[Question] Practice shows that approximately one-half of the applications for inventions that come into the Institute of State Patent Expertise are either incorrectly

filled out or do not contain new technical solutions and therefore their authors are not given a document to protect their invention. What does this tell us?

[Answer] Mainly that inadequately trained people have done the job; the developers themselves do not have knowledge about patents and information, they have not been able to conduct a careful patent search for analogues, they have not been able to intelligently fill out the application or draw up the corresponding documents, and the patent services in the local areas have not rendered them good assistance. The same practice shows that in places where there are strong patent services and where the developers themselves have the appropriate training, the percentage of refusals to issue authors certificates is not great—5-10 percent.

[Question] But the experts also sometimes make mistakes....

[Answer] Unfortunately, this is so. We know of cases of unconscientious and unqualified approaches to the matter on the part of experts. These cases become the subject of serious investigation. The guilty parties are punished correspondingly. The work of the experts must be improved and certain measures are being taken to do this.

[Question] Up to this point our discussion has pertained to the role of patent services and patent knowledge in general with respect to processes related to the creation of new technical equipment, technology, materials and so forth. But does the committee have levers powerful enough to change the situation for the better and to influence those managers of enterprises and institutions who have not yet recognized that the new must contain new technical solutions, in other words, inventions, and that this requires strong patent services, and in general patent knowledge on the part of those who are creating what is new?

[Answer] The ministries and departments have such levers. Ours is a different task. It amounts not only to conducting a qualified and objective expert evaluation in order to register inventions, but also to selecting those that are the most valuable and suggesting that industry utilize them. We must also provide methodological guidance of processes related to invention work. The corresponding methods have been developed. Our task, finally, is to provide the developers of new technical equipment with all the necessary information pertaining to inventions in the world. To this end we have created the State System of Patent Information—GSPI. This system still has to be improved in the most significant way, for it is not operating effectively enough. We are still too slow in filling orders from consumers. It takes weeks and sometimes months to do this work, and it should be done in a couple of minutes or hours.

[Question] Ivan Semenovich, you have said that the committee's task includes selecting the most valuable inventions and recommending them to be used in industry. But by what criteria is their economic effectiveness evaluated? I have been told that the economic effectiveness from the utilization of one and the same invention can be calculated in such a way that there can be a severalfold difference. And the same thing can be said about the payment of awards to the authors.

[Answer] Yes, serious complaints can be made against economic science here. There are no unified and objective criteria for evaluating the economic effectiveness from the utilization of inventions. Here science will have to do some serious work. We need clear and precise methods for calculation that do not allow the differences in interpretations that now occur.

The absolute number of applications for inventions in our country is fairly large. There are also many that are registered as inventions....

[Question] But this still does not say anything about the value of these inventions for scientific and technical progress, not to mention their effective utilization. Quantity is not an indicator of quality....

[Answer] I agree. An extremely large proportion of the inventions are not very effective. There are those that produce a savings of hundreds and those that produce a savings of tens of rubles, but we consider them useful. But if we take into account that 90 percent of the inventions in our country are created on the job during the process of work according to plans for NIOKR, the existing situation cannot be regarded as satisfactory. It will be necessary to decisively change the practice of NIOKR planning itself, taking into account not the quantity of inventions that are created, but their significance, effectiveness and, finally, the world level of innovation of the technical solutions that are proposed. Our committee conducted an analysis of a number of pieces of new technical equipment. The results showed that 61 percent of the inventions included in these objects were more than 10 years old and 15 percent of them were from 15 to 30 years old! It is not surprising that this kind of, as it were, "new" technical equipment cannot compete in world markets. And yet the authors take credit for the work that has been done....

[Question] Up to this point, Ivan Semenovich, our discussion has not touched upon the problems of industry's utilization of the results of invention activity. Much has been said and written about the reasons why inventions have such a slow and difficult path to being realized. The committee when revealing the most important and valuable works regularly suggests that the ministry's utilize them. But a fairly large proportion of them are not applied.



[Answer] The reasons are fairly well-known. Since the April (1985) Plenum of the CPSU Central Committee, we have been working on one large project of principal significance which involves transforming the entire economic mechanism and creating effective management levers. This work pertains directly to the output of new technical equipment that can compete on world markets, including invention work. The entire complex of measures taken to implement the socioeconomic program of transformations earmarked by the 27th Party Congress is directed toward creating in the country a system of organizational, methodological, economic, and social conditions that are favorable for radical changes in our socialist economy.

[Question] In an interview in one of the central newspapers you discussed the committee's desire to create an invention introduction center with branches in various regions of the country. But one of your opponents, I. L. Kotlyarevskiy, expresses doubts about the usefulness of such a measure. (Footnote 1) He thinks it is one of the attempts to solve a complex problem of an interbranch nature through the forces of a single department, in a word, the notorious departmental approach is manifesting itself again. As I understood it, it was suggested that you create something like an experimental testing ground to try out inventive ideas. But industrial ministries have fairly large services to do this work. It is their immediate task to utilize inventions, having verified their expediency beforehand. What point is there in having the committee take over the tasks of the ministries?

[Answer] Apparently I did not explain clearly enough or you and my opponent I. L. Kotlyarevskiy did not see clearly enough the specific task facing such a subdivision. Many inventions are created in the country which for various reasons do not find their way into the plans for new technical equipment. They become ownerless and their authors begin going through purgatory. These are mainly individual authors, many of whom work in the system of the Ministry of Higher and Secondary Specialized Education or the USSR Academy of Sciences. We want to help realize their ideas and, if they turn out to be productive, turn them over for utilization in industry. As you can see, we do not intend to take over the tasks of the ministries.

[Question] But there are thousands of these inventions.

[Answer] Before turning them over to the introduction center, our specialists do a certain amount of work to select the most effective technical solutions. They conduct a comparative analysis of their innovation and the effectiveness of the relatively better world achievements, having first evaluated their economic expediency. This is the only way to conduct a selection of the most valuable innovations to be comprehensively tested in the center. If our experts are not mistaken and the mockup for experimental models test well, we will recommend them to be used in industry.

[Question] What is the proposed structure of these new subdivisions?

[Answer] We think that it would apparently be necessary to create a number of these introduction organizations, including in them several hundred engineering specialists and workers. But they must be highly qualified specialists, equipped with the most modern technical equipment. They must work rapidly, as they say, from the printed page or the sketch.

[Question] At one time the Tallinn RET created a similar subdivision, to be sure, on a much smaller scale—the division for accelerated introduction of inventions. It proved to be very good: the entire cycle, from the idea to the mockup or experimental model, took about 3 months. This, as they say, was at the level of the best world examples of efficiency. They work from sketches there too.

[Answer] Yes, we are familiar with this experience. It should become widespread. Our new subdivisions should also rapidly produce new technical solutions proposed by inventors, test them, determine the expediency of their utilization by industry, and then recommend them to the ministries. I repeat that this pertains to the so-called unorganized inventions. Could it really be bad for such subdivisions to begin to function in our national economy? We think that there is a good deal to be gained from this.

#### Footnote

1. Kotlyarevskiy, I. L., "Science and the Mechanism for Introduction," EKO, No 11, 1986.

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**New Computer Applications Examined**  
*18200005c Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 8, Aug 87 pp 30-42*

[Article by Yu. P. Voronov, candidate of economic sciences, Institute of Economics and Organization of Industrial Production of the Siberian Branch of the USSR Academy of Sciences (Novosibirsk): "Expert Systems"]

[Text] By now the possibilities of computer equipment are expanding more rapidly than the desire to utilize them. A clear example of this is expert systems—computer equipment that helps man to make substantiated decisions. To a large degree they have become widespread in noneconomic applications, and only in developed capitalist countries are they utilized fairly extensively in the economic sphere. Yet they are of special



interests for management under the conditions of a planned economy. And if today the need for expert systems is not strongly felt, one must at least discuss what they are, so that the production workers will develop an interest in them, and then discuss the need for them.

We are speaking about machines that give the impression of thinking. The creation of these machines is in the area of applied mathematics that is called artificial intelligence. Throughout the world there are not many scientists working on problems of artificial intelligence—no more than a thousand. But these thousand people are now preparing a major computer revolution which will place alongside man a "rational" assistant—an expert system.

The volume of sales of equipment with intelligence properties is increasing fourfold each year in the United States. Each year there is a threefold increase in the sale of information systems for managers. In comparison with these the traditional means of automation are selling appreciably less well, and their sales are growing by 90 percent per year.

### What Is an Expert System?

An expert is a person who is knowledgeable in some area or, on the basis of his own experience, is capable of solving a complicated problem relating to this area. Experts usually achieve their ability through trial and error, and the level of their qualifications is determined by the proportion of successful solutions, which is never equal to 100 percent.

Here are the basic characteristics of expert systems. They are capable of processing information submitted in any form: numerical, symbolic, textual, graphic, and they can explain how the conclusion was reached; they are capable of interpreting knowledge in a given area; and they use special languages to work with knowledge.

In the opinion of one of the leading Soviet specialists in expert systems, Professor D. A. Pospelov, it is possible to single out two groups of functions performed by them. The first includes five mandatory ones:

- storing knowledge in a certain area: facts, descriptions of events, and patterns;
- being able to communicate with the user in a limited natural language;
- mastering a complex of logical means for producing new knowledge, revealing patterns, and discovering contradictions;
- defining a problem on demand, refining its definition, and finding a solution;
- explaining to the user how the solution was reached.

The second group includes two additional functions which are desirable but not mandatory:

- developing confidence, that is, communicating information which increases the user's confidence in the expert system;
- having the possibility of discussing itself and its own structure.

Not the least important distinguishing feature of the expert system is that it is open for training. Half jokingly and half seriously information was published about an expert system for hairdressers. A personal computer is installed in a beauty salon and it contains a program-consultant on hairdos. A feminine master keys into the machine the client's basic external data: type of nose, eyes, length of neck, and so forth, after which the system begins to show on the screen all the possible hairstyles on a mannequin that is modeled in practically the same way as a portrait-photo robot is done in criminal practice. There is the possibility of looking at the hairdos from all sides and selecting or rejecting it and going on to the next one.

The initially installed system has no experience in consulting and is guided by those few general rules that are put into it by the developers. But with time the system "gathers experience," remembering all the decisions that have been made with its help. It suggests to the regular client the selection of hairdos that women of approximately the same external experience like. Therefore, as the expert system works longer its value naturally increases.

Three methods are used to fill the expert system with knowledge: either new relations and data are introduced in the process of working in contact with the user and the system programmer, or this is done independently by the user, or, finally, the complete system is prepared by a brigade of specialists who then release their item to representatives of the client. But in any case the creation of a system takes from 1-3 years, and the cost of each is fairly high—up to several million dollars. In any case there is no expert system for bookkeeping in general, for the builder with all the problems he encounters at the construction site, and so forth. Of the functions performed by man, they preliminarily "carve out" a relatively small group of problems for whose solution the expert system is intended. Narrowing the sphere of operation is a necessary measure.

As distinct from the data processing system, expert systems use not a specific algorithm for solving a particular problem, but initially select the necessary algorithm which will solve the given problem better than others. Therefore they require not only funds of facts, but also funds of algorithms for solving typical problems. Examples of the utilization of the experience of specialists in machine algorithms existed even before expert systems. Thus the firm General Electric, in order to solve problems of designing locomotives, simply formalize the experience of their head rail transportation specialists. The programmers were able to construct a system that imitates the way this specialist makes a decision. With its

help a prospective model of a locomotive was developed. But in expert systems the utilization of the experience of specialists is placed on a flowline. In addition to this, the databases of expert systems include knowledge which is usually presented in textbooks, reference works, and guidelines.

These are considered to be the most complicated problems in working with knowledge: how to obtain it, how to put it into the system, and how to coordinate new knowledge with already existing knowledge. The solution to these problems should be handled by specialists of a new profession—so-called knowledge engineers. So far they are not being trained anywhere in the world.

Methodologically, expert systems are a further advancement as compared to databases. In these, in addition to constructing a set of relational ratios, one realizes the structure of semantic ties among the categories that are being used. Each expert system consists of the following parts: a base of knowledge; a mechanism for logical conclusions and blocks: explanation, training, communication in a natural language; and maintenance of the base of knowledge.

In 1983 American sources announced the practical application of 50 expert systems. The earliest type was a system for medical diagnosis.

In 1984 the sum of sales of expert systems on the world market amounted to from \$150 to 250 million. The great diversity in evaluations depends on various criteria: what should be considered an expert system. In 1985 expert systems were produced by 40 firms of the United States. According to predictions, at the beginning of the 1990's the sum of sales of these systems will amount to \$5-10 billion and by the end of the century they could increase to \$60 billion. A considerable number of expert systems that are being sold on the international market have been developed in Hungary.

Let us give a couple of examples of existing expert systems. There are not very many because on the whole the investigation of the market for these applied computer devices requires not simply independent research, but also constant work on the part of a good-sized scientific research collective.

### **For Medical Workers**

In certain hospitals of the United States there are systems that provide consulting for physicians. They do not provide a final diagnosis, but medical experts agree with them in 85 cases out of 100. Usually the physician's disagreement with the diagnosis means additional information for the system, and once it has received it it begins to search for other paths to a correct diagnosis, that is, one with which the physician will agree.

The most powerful medical expert system is considered to be INTERNIST, which was developed at Carnegie-Mellon University. Its knowledge base includes information about 500 diseases of the internal organs. The ONCASIN system selects a strategy for comprehensive therapy in oncology. another one, CADUCES, consults on general therapy, and MYCIN—on infectious diseases of the cardiovascular system, including infectious meningitis. The latter, which was developed at Stanford University, guarantees that in 90 percent of the cases the physician will agree with the first diagnosis and the indicated kind of antibiotics.

Initially the CADUCES system solved a particular problem of identifying the microorganisms causing bacteremia and selecting acceptable therapy. In other words, initially it was not even diagnostic. But its improved variant, EMYCIN, can teach itself. This property makes it possible to use it as a foundation for creating expert systems in nonmedical areas. An example of this kind of use is given below, but actually this situation is typical of all medical expert systems and therefore they are all of interest for specialists who have nothing to do with medicine.

The expert systems PUFS and CENTAUR diagnose lung diseases. It is known that the creation of PUFS required 50 hours of work with pulmonary specialists with high qualifications, and also 10 man-weeks of work of so-called knowledge engineers. This system contains 55 rules for logical deduction and guarantees a correct diagnosis in more than 90 percent of the cases.

There are also expert systems for narrower purposes. The narrowing of the sphere of their effect makes it possible to come to better substantiated diagnoses and treatment strategies. For example, the MDX system (developed by Ohio State University) is intended for diagnosing nine established diseases of the liver; the PIP system, which was created jointly by the Massachusetts Institute of Technology and the New England State Central Hospital is intended for diagnosing 20 diseases of the kidneys.

The purpose of the expert system called GLAUCOMA is clear from its name. it was created by Rutgers University and the Mount Sinai Medical School in the State of New York. Within the system is a logical network that describes the cause and effect relationships between 400 initial symptoms and 1,200 diagnostic statements. The ABEL system is intended for diagnosing and selecting a method of treatment for acid and alkaline disorders in the functioning of the digestive tract. Its development was financed by the National Medical Library of the United States and it brought together a number of scientific research organizations: from Massachusetts Institute of Technology to the research center of the Xerox firm in Palo Alto. In Czechoslovakia, the Electrotechnical Faculty of the Prague Higher Technical School developed an expert system for diagnosing syndromes of

human genetic diseases. In Bratislav the expert system COMEX (Computer Medical Expert) is becoming widespread. It can be adjusted for diagnosing arbitrary classes of diseases.

In our country such "physicians' advisers" have already been created by several scientific collectives. In the All-Union Institute of System Research, for example, they have created an expert system for diagnosing hypertension (developer—A. D. Smolyaninov); in Leningrad they have created the AVTOMTEST system—a psychologists' adviser (developer—T. A. Gavrilova). Also in Leningrad, at the Scientific Research Computer Center of the USSR Academy of Sciences they are developing a system for diagnosing diseases of the peritoneal cavity which presumably requires surgical intervention. In Baku at the Computer Center of the Azerbaijan ASSR Ministry of Public Health they have created and are utilizing an expert system for resuscitation divisions. There is an analogue for the latter abroad: the NEDAS system, which was developed at the University of Southern California. It is capable of producing 53 diagnostic conclusions.

Medical expert systems are being actively developed in the Far Eastern Scientific Center of the USSR Academy of Sciences. They have created the MODIS system—for consulting on therapy for arterial-hypertonic diseases. In MODIS diagnosis begins with putting the case under consideration in one of three large groups of diseases; then the diagnosis is concretized within this group.

If a physician does not agree with a diagnosis he can ask the question: "Why?" In response the system describes the path by which the diagnosis was reached: intermediate hypotheses and reasons for rejecting them; it suggests changing the range of input parameters. The development of means that answer the question "Why?" is becoming an independent sphere of planning activity. We already know of the BLAH system which only explains but does not diagnosis. It can serve as an explanatory block in an expert system that is being developed and not necessarily one for medical purposes.

The next stage in the development of medical expert systems is now being determined: their unification among themselves. The United States is currently developing the SUMEX-AIM computer system which is intended for medical experts and in the future it should facilitate operational access to expert systems for a broad range of physicians.

### For Geologists

Geologists of a number of countries are using the PROSPECTOR expert system, which helps to find supplies of petroleum and other minerals. The Teleknowledge firm has developed for the French petroleum company Elf Aquitaine, an expert system for what would seem to be a quite narrow problem: what to do if a drilling column

has been jammed in a well. At the present time in the majority of oil fields of this firm there are terminals from which one can access the system.

Another system-expert for drillers provides consultation on drilling tactics at any place in the world. It performs work which was previously assigned to a group of experts before drilling out a new deposit. The system regularly accumulates information about geological conditions throughout all the petroleum-bearing areas of the earth's crust.

The Scicom firm, in conjunction with British Petroleum, is creating a system for controlling oil wells in the North Sea. Within the framework of the system there is an expert block which gives advice in the case of an emergency in the oil fields. The EXPERT system analyzes 500 variables describing causes of accidents of drilling columns. We know that it produces a savings of hundreds of thousands of dollars a day because of the more efficient elimination of minor emergencies.

### For Economists and Managers

The Westinghouse Company has developed an expert system for intrashop planning. It traces the bottlenecks in the production process and minimizes the volumes of incomplete production and supplies of raw materials, processed materials, and semimanufactured products. This kind of careful planning "through people" would require about a thousand planners. This same Westinghouse Company has developed an expert system for repair of equipment.

A special computer of the IBM firm reads printed text and looks for given key words in them. According to the intention of the developers, in the future it should read all the incoming mail, sort out the most important pieces, and distribute it throughout the subdivisions of the enterprise. The Cognitive Systems Firm has developed a number of mass systems for advising everyone who fills out declarations of income. As you know, this is done by every family once a year when paying federal income tax. The Rank Xerox firm has created a system of expert advice on personnel problems and planning the advancement of workers up the job ladder.

The system called NEGOTIATION EDGE was realized on IBM personal computers. The manager feeds into the computer information about the subject of negotiations, about his intentions and about his partner, after which he can obtain recommendations about tactics for conducting negotiations. The largest West German firm, Simens, has developed an expert system that helps in drawing up the financial plan and making contacts.

The West German firm Schleicher und Schul has three enterprises—a total of 600 employees. The paper factory in Dassel produces 450 kinds of paper and each day puts out 20 reports with 2-3 items in each. With such a narrow range of information the computer has nowhere

to turn. Another factory of the firm, also located in Dassel, produces paper replacement filters—3,500 kinds of them—and each day produces 180-200 reports with 8-10 items in each. The plant in Einbeck does typographic work and produces paper items: 1,500 kinds of products with 8,000 permanent clients. There are 2,500 orders in production at the same time and about 200 reports with 8-10 items in each are filled out each day. As early as 1979 the firm created for its clients a network of terminals that enable the client to look through catalogues, select the item he needs, and fill out the order.

In August 1986 in the newspaper SOTSIALISTICHESKAYA INDUSTRIYA there appeared a description of the procedure for ordering a nonstandard cabinet for a newspaper correspondence office in Vienna. A special correspondent went to the P. Max firm, which has an office for receiving orders in each of the 23 regions of Vienna. This is how the correspondent describes his impressions: "In the order office in my region there was only one employee of the firm and...a table computer about the size of a small television set. Listening to my request attentively, the worker quickly 'sketched' the necessary blueprint of the order on the computer screen. Answering the computer's questions regarding the color, thickness of the walls and sizes of the handles, the employee-operator pressed a button and...the order was accepted for execution. It went into the central computer which is located 30 kilometers from Vienna. The order was filled within 2 weeks).

One must consider the saddest element in the minireport presented above to be the ellipses. They expressed amazement about something that should have been introduced into the domestic economy a long time ago. Of course notepads and cabinets have a tiny amount of technical documentation as compared to technological equipment. And computer equipment is used here more for registration than for logical deductions. But we can imagine a large system of economic agreements concluded on the spot according to the system presented below for filling out an order on a robot of the ACEA firm with the help of an expert system.

### How To Order a Robot

In 1985 the Swedish firm ACEA completed a plan for GARMAN (Gun and Robot Matching Automatic Nominator) whose purpose was to create an expert system for filling out orders for precision welding robots produced by the firm. As a basis specialists of the company and the University of Linköping used the aforementioned EMYCIN expert system. The root of the problem was that the firm's sale agent could not be as much of a specialist in the area of welding technology as the representative of the potential client was: for the sale it was necessary to know the specific production conditions, the list of welded parts, the form and quality of their surfaces, and the materials that were used.

The salesperson could obtain the information only from the client. Therefore the former got the idea of modeling within the computer a dialogue between them in such a way that the questions for the salesperson were asked by an expert system. But the structure of a possible dialogue turned out to be too complicated and a somewhat different path was selected.

A precision welding robot consists of a welding grip, the robot itself, and a transformer. Additionally, when ordering it is necessary to take into account the way the three parts are put together and the system for hooking up to the electricity network. The expert system begins to "unravel" the order by taking the smaller sizes, which immediately sharply reduces the number of permissible grips. The selections proceed from this limited number of grips. The main assistance here is rendered by the coordination of the grip and the transformer. When this coordination exists, it means that a permissible solution has been reached.

If the required external size is known the following are sequentially refined: the length of the grip, the spread of the tongs, the force and load of pressure of the electrodes, the current and time of welding, and the diameter of the spreading cylinder. If after all these selections more than one grip is still acceptable, other preferences of the client are included.

GARMAN selects from two types of robots produced by the ASEA firm with a large set of grips produced by the AVG, ARO, Nimak and Martin companies, and transformers of the Kirkgof firm. The automotive industry is a special area of sales. Filling out a typical order includes from 10 to 30 questions for the client and lasts a couple of minutes. The system was developed by two specialists in a half-year. But while being surprised about such a small volume of labor expenditures, one must take into account that all of the dialogue part and the basic blocks of the logical deductions were taken from the EMYCIN. This fact enables us once again to recall the importance for production workers to be familiar with the medical expert systems.

### How To Combine a Computer With Other Equipment

At least three companies—IBM, DEC and BUHL—have their own expert systems for developing the architecture of computer devices.

When a specialist hears that some organization has acquired a computer he must find out what package it is. The most minimal and least expensive is the first. In the jargon of specialists, it is said to be still naked: in addition to the processes the package includes at least one device each for input and output. Other packages are richer, and they are all different from one another: one has more memory on magnetic disks, another includes a special computation device that accelerates multiplication, in a third the external memory is less, but for one

machine there can be 15 or 20 packages. They deliberately do not include all possible situations, especially with respect to a control computer. But on the other hand, the manufacturing enterprise cannot endlessly increase the list of packages it produces. Expert systems help to find a way out of the contradiction.

The most typical in this area is considered to be the expert system XCON by the American firm Digital Equipment. Initially it was thought that the system would deal with artificial intelligence. But with time the task was refined as the creation of an intelligent expert system—an adviser.

The system began to operate with a certain initial configuration taken from a preliminary order which is drawn up by the client on the basis of his own eyes about the possibilities of computer equipment for solving the tasks set for it. XCON crosses out the duplicating blocks and adds those that are missing on the basis of the principle of making a minimum of changes to the initial order and it takes note of the gross errors.

When the cards are distributed among the blocks and the blocks among the cabinets with a parallel coordination of the installation cards and wires with a distribution that has been obtained. Upon completion of the arrangement one receives a permissible variant of the package that has been ordered. Now it should be coordinated with the standard package that is used in the database and the order is finally formulated.

The result of the work of the system is a list of cards and blocks with brief descriptions and commentaries regarding how they fit into the given package. The list is divided into two parts: that which is included in the immediate series package and that which will be ordered in addition.

In addition to this there is a diagram of the arrangement and an indication of the defects of the selected configuration which have been not been limited. This expert system is coordinated at the present time with another—XCEL, which engages in formulating orders for other items of the DEC firm.

### For Others

It has already been said that it is impossible to describe completely the entire sphere of application of specialized computer systems.

Thus builders expect from expert systems advice on eliminating defects in designs of bridges and buildings. The SACON system helps specialists in selecting material for aircraft wings. Many firms are creating expert systems for finding malfunctions on circuit boards. Illinois State University has developed a system of diagnosis of diseases of soybeans. In general agriculture is considered to be the next most promising sphere after medicine for the application of expert systems.

The Rand Corporation has designed several expert systems for the Pentagon: ROSIE—for strategic control of the Air Force; TEKA—for making tactical decisions in the Navy; and SN/X for identification of moving objects in the sea.

### Empty Systems

At the present time practically all expert systems are being developed on orders. It is expected that the first to appear on the free market will be the so-called "empty" expert systems, that is, those that will be filled with knowledge by the users themselves. But an immense amount of work will be necessary to do this—create service programs that would enable a person without programming skills to fill in the expert system. The fact is that all of the aforementioned systems were created by highly skilled programmers who worked with the expert-specialists in a specific area. But this cooperation did not cease throughout all the time until the system began to operate as an expert system, that is, produce an advantage through its advice.

The first attempt to travel this path to the end was the AGE (Attempt To Generalize) system. It was intended to be a system for creating expert systems. Its potential user was a laboratory for logical programming that develops expert systems. It contains the basic blocks of the expert systems: logical deduction, maintenance of the data base, and so forth. But the user completes the description of the basic part of the system by himself.

In our country the ones to come closest to the creation of "empty" expert systems was the collective of associates of the VINITI, led by V. K. Finn and handled systems for discovering patterns in the experiment. A path close to this—from solving problems of recognizing images to expert systems—were taken by another collective of researchers—of the Institute of Mathematics of the Siberian Branch of the USSR Academy of Sciences, headed by N. G. Zagoruyko. The Siberian mathematicians are working in close contact with the agricultural division of the RSFSR Gosplan. As a result of their planning work the first expert system for the Soviet planner will appear. The development of large-scale general purpose expert systems is being done in the Institute of Cybernetics of the Ukrainian SSR Academy of Sciences in Kiev (leader—A. N. Dovgyallo) and the Computer Center of the USSR Academy of Sciences in Moscow (the work is headed by G. S. Pospelov).

Fundamental research in the area of mathematical software for expert systems is being conducted by the laboratory for artificial intelligence of the Computer Center of the Siberian Branch of the USSR Academy of Sciences (leader—A. S. Narinyani). This laboratory is included in the division for information science headed by Academician A. P. Yershov.

There should be more expert systems. They are a powerful means of improving the quality of planning and management activity.

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### **Reader Mail About Technology Surveyed**

18200005d Novosibirsk *EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO)* in Russian No 8, Aug 87 pp 42-57

[Survey of editorial mail by Ye. L. Lysaya: "New Technical Equipment: The Green Light!"; first two paragraphs EKO introduction]

[Text] Our editorial mail shows that in recent years there has been an immeasurable increase in EKO readers' interest in problems of scientific and technical progress. The tasks set by the 27th CPSU Congress concerning the changeover to an economy of higher organization and effectiveness on the basis of the latest achievements of science and technology has given a strong impetus to the thinking about improvement of the control of scientific and technical progress and the destinies of innovations, and has evoked many ideas and suggestions.

We are not setting the goal of considering all the mail about this subject, and we could not do that since it is extremely large. But we would like to give an idea about the main directions of the readers' search.

### **Bridges of Cooperation**

Now very frequently even large-scale innovations with great national economic significance ends up being realized only at one enterprise. Years pass before they make their way into industry. The government sustains immense losses because of this. The time factor is not taken into account, even in the ideal case when it is intended to reproduce it regardless of what happens. There is no incentive for simultaneous transfer of developments to a large number of consumers. And since during this time the scientific collective is developing new research which requires a complete exertion of efforts, frequently the introduction amounts to pioneering realization of the innovation by one consumer.

"We must learn to value the time factor," writes an instructor at the Novosibirsk Electric Equipment Institute, G. I. Smagin. "In order to improve its utilization I suggest turning to cooperation in the promotion of new developments. This form of cooperation can be effective at the territorial level: several client enterprises from various departments are joined together to solve a single problem in which they are interested, thus creating a

fund for financing the subject and a general scientific and technical council consisting of specialists both from the enterprises and from the research and developers.

"The goal of such cooperation is parallel introduction of new technologies and the acceleration of the reproduction of developments. The mission of the association of clients and manufacturers can be taken over either by the leading scientific research institute or by a large NPO or by the industrial division of a territorial party committee, or by the oblast council of scientific and technical societies. That is, it is necessary to have a coordinator, an organizer of the work."

The sector chief of the Odessa Special Design Bureau for Printing Machine Building, A. R. Gergel, thinks that "bridges of cooperation on the basis of mutual interest of science and production is a radical path to the acceleration of the realization of new developments. The final scientific result—effective new technical equipment or technology—finds it easier to make its way into industry," he notes, "when it is transferred from science to production, as they say, with 'turnkey.' For this kind of presentation of the scientific result it is necessary to have a solid production base, which science frequently does not have. Nonetheless it is inexpedient to create a full base, which practically all scientific research institutes and design bureaus dream about and are achieving. It is expedient if only because even in industry the coefficient of utilization of equipment is far from optimal and in experimental productions of science it will generally be negligibly small. It is necessary to construct bridges between science and practice, and mainly 'bridges of cooperation.'

"The enterprises have sufficient capabilities of filling the orders from science if the Provisions Concerning Cooperative Jobs for Science are drawn up correctly. The basis of the interest can be shifted to increments to the price—a principle that has proved to be good for stimulating technical equipment of a high level and work for manufacturing individual components and parts for new technical equipment. Yet even today science cannot do without cooperation with industry. And today, with the need to carry out specialized high-precision work, science is bowing to production and receiving what it needs. But all this is done, as a rule, by way of rendering assistance, according to the principle of 'maybe I will and maybe I will not.' Why not give the partners equal rights and mutual interest, and why is it necessary to hope for patronage and favors?"

It seems that the proposed "bridges of cooperation" deserve the attentive consideration of the State Committee for Science and Technology, the USSR Gosplan, the All-Union Council of Scientific and Technical Societies, and territorial management agencies. Useful organizational solutions have been advanced which could contribute to accelerating the realization of scientific achievements. They require neither additional resources nor staffs nor capital investments. As A. R. Gergel put it

figuratively, a reliable foundation under the supports of the 'bridge of cooperation' could be the initiative and enterprisingness of both sides—science and production."

### "Self-Isolation": A Real or a False Threat?

Still, the authors of a number of letters remind us that we must develop and improve existing forms of interaction among organizations for introducing scientific achievements. A docent of the faculty of political economics of the Yaroslav Branch of the All-Union Correspondence Institute for Transportation Engineers, V. M. Danchin-Yu and a senior scientific associate of the Institute of Nuclear Physics of the Kazakh SSR Academy of Sciences, Candidate of Physical and Mathematical Sciences A. B. Yushkov write with alarm about the fact that recently there has been a weakening of the interaction of participants in the process of realizing innovations, that there is a "self-isolation" of branch and academic institutes, as a result of which the academic institutions must step up their work with applied subjects to the detriment of fundamental research.

"When the academic scientific research institute begins to create industrial models of new technical equipment through its own forces, having the intellectual and scientific potential but not having the production capacities, this is fraught with failure and wasted expenditure of energy, time and funds. There is a great probability of failure also when the branch scientific research institute, forgetting about production, tries to discover the secrets of nature. Therefore everyone should do his job in the interconnection with one another," notes A. V. Yushkov.

Investigating the problem of "self-isolation" of branch institutes, V. M. Danchin-Yu shows a number of its negative consequences, above all the negative influence on the creation of the long-range scientific and technical fund, that is, the preparation of a reserve in the sphere of science and technology, which should be continuous and planned in nature.

"Under conditions when there is mass introduction of new technical solutions, it is necessary at the same time to create a future technical and technological fund which could be put to work without halting production. I should like to illustrate the need for this approach with an example from diesel engine construction. For many years the Yaroslav Avtodizel Association has been conducting what specialists consider to be fruitful work for increasing the service life of the engines. This has made it possible for the Minsk Automotive Plant to increase the guaranteed mileage of MAZ's before capital repair from 300,000 kilometers to 520,000. At the same time it is quite obvious that because of objective factors the model of the engine is becoming obsolete. With all of its improvements and modifications it originates from a base model that was created in 1897 (90 years ago). Further possibilities of a diesel engine are already limited. Today, in addition to improving this model, it is

necessary to research, investigate and, possibly, even test principally new engines. We are speaking in particular about engines using hydrogen fuels," writes the author. "This revolutionary solution to the problem is possible only in cooperation with academic, VUZ, branch and plant science. But so far we are still making up for lost time—providing diesel engines for trucks and passenger transportation."

How does one overcome isolation? A. V. Yushkov suggests the following solutions for optimizing the organizational structure: establishing a dependency (administrative and financial) at all levels of integration of science and production. The directors of branch scientific research institutes could simultaneously be deputy directors of academic scientific research institutes; the financing of the subject matter for branch institutes could be provided only after a joint decision by scientific councils of academic and branch institutes; the reports of branch scientific research institutes should also be considered by the combined scholarly council of the institutes. The branch scientific research institute develops the idea to the point of a concrete development and turns it over to the plant sector of science in a form in which it can be prepared for realization based on the specific conditions of production. Here the development is approved by the joint scientific and technical council of the institute and the enterprise.

And yet a sector chief of the All-Union Scientific Research Institute of Problems of Organization in the Management of the State Committee for Science and Technology, Candidate of Economic Sciences V. S. Bondarev generally raises doubts about the need for scientific research institutes as such. "The critical nature of the problems of radically improving things in science and technology requires both a radical breakdown of the existing stereotypes and accounting for the experience accumulated by mankind in the organization of creative activity," he declares. "We must recall that scientific research institutes have not always existed. But even if some form was best at some time this does not mean that the situation does not change.

"With the accelerated rates of scientific and technical progress we need a rapid restructuring within the institutes in order to solve new scientific and technical problems. But even with the condition that now the management of the institutes have been granted the necessary rights, restructuring and reorientation are being carried out very slowly and with large losses. The objective opposing factors consist in that the entire collective of the scientific research institute, from the manager to the most junior scientific associate, is interested in the stability of the subject matter and in retaining existing ties and relations. The actual monopolization by the institute of a particular sphere of activity contributes to this. Since each branch institute is a part of some department, it becomes a means of expressing not only its own interests, but also departmental ones. This is precisely why the branch scientific research



institutes are not very suited for organizing interdisciplinary research and interdepartmental cooperation. This was demonstrated clearly by the practice of implementing unionwide scientific and technical programs under the 10th and 11th Five-Year Plans.

At first glance, the idea of forming a temporary scientific collective made up of specialists of various profiles and various organizations for solving a concrete scientific and technical problem seems irreproachable. But if the external cause of the excessively rare utilization of this form is the impossibility of coordinating the conditions for the work and payment of the collective, the real one is the existence of those very institutes on whose basis temporary collectives are created. On the one hand, what kind of institute (what kind of management) can reconcile itself to dividing up part of its institution while remaining responsible for people and equipment? And it is necessary for it to support this division as well. On the other hand, why should a scientific worker break away from his native collective, from his own subject matter and management in order to return there after 2 or 3 years?"

But what alternative can there be to the scientific research institute? In the opinion of V. S. Bondarev, voluntary associations or alliances which could be arranged analogously to creative alliances would be such a form of organization. They should include those who have proved their capability of creative scientific and technical activity. It seems to the author that in time the basis for acceptance into an association could be the conferring of a degree of doctor of sciences. "For members of the association it would be expedient to establish a guaranteed minimum wage which would provide minimum conditions for the activity of scientists instead of the high salaries that are now being paid and a second part of the payment should be constructed taking into account the results of the work of the scientists," he writes. "An example of this system of payment is the author's honorarium for a work of literature or art."

"Since the collective is formed in order to perform a particular job, it is a temporary collective whose leader should be given special rights in order to exercise the authority granted to him by the client. It would be desirable to use a competitive system to determine the most effective developments. For the work of temporary collectives one could rent them premises and equipment from institutions that have been eliminated, which would then be turned into rental centers. In the proposed systems state interests could be represented by the fund holders and clients, whose role would be played by the ministries, departments, associations, and enterprises (with money from the Unified Fund from the Development of Science and Technology, the Fund for Development of Production, and budget allocations).

"Naturally, centers like these should have management-economic and technical personnel who would provide for the operation of technical equipment and auxiliary activity (typing and so forth)."

To be sure, it is appropriate to recall that members of creative unions of writers, artists, cinematographers, composers and others receive only the authors' honorariums for their work and no other payments, either in the form of a guaranteed minimum or in any other form. Of course those who, in addition to their creative activity, work in certain organizations, receive wages for performing their official functions. And the author himself thinks that in the system he proposes for payment for members of creative associations of scientists there is an element of charity, but, in his opinion, it makes sense for the society to make these expenditures since because of the target orientation toward the final scientific result there is a sharp increase in the return from science and there will be a savings on resources and a reduction of the number of personnel.

There might be some question about V. S. Bondarev's idea concerning completely rejecting scientific research institutes, but he is undoubtedly right when he says that it is necessary to rid ourselves of the ballast of ineffective scientific research institutes. The work of branch scientific research institutes was subjected to serious criticism at the 27th Party Congress and the June (1986) Plenum of the CPSU Central Committee. "In many scientific research institutes and design bureaus a kind of syndrome of incomplete value has developed. The poor creative results have been justified by the fact that it is supposed to have been impossible to work any better," noted General Secretary of the CPSU Central Committee M. S. Gorbachev at the June (1986) Plenum of the Party Central Committee.

The country is taking energetic measures to increase the effectiveness of the activity of scientific research institutes and design bureaus. Those organizations that are not producing the necessary results are being eliminated. As we know, the NIIkomplekt of the Ministry of Chemical and Petroleum Machine Building, GipronIIMash of the Ministry of the Machine Tool and Tool Building Industry, and certain other scientific institutions that were producing no advantage for the national economy were eliminated. It is quite possible to use their capital as rental points for temporary voluntary scientific collectives, which the author advises.

### **Remember Technological Planning!**

"Remember technological planning; it is increasingly being consigned to oblivion as an independent area and is increasingly being held captive by construction planning!"—an engineer from the Kuybyshev Division of the State Scientific Research Institute of Radio, A. A. Morozov, exclaims with alarm. "Now, when we are following a course toward reconstruction and technical reequipping of enterprises, we cannot allow for work methods and organizational structures of planning and technological institutes to stay the same. The acceleration of scientific and technical progress requires a sharp change



in the structure of branch planning institutes in the direction of expanding their technological and technical-economic directions. But so far there have been no radical changes.

"In postwar years it was necessary to restore industry that was destroyed by the war. During the 1960's we continued to expand branch production bases. The general planners worked on plans for new construction and expansion of existing enterprises. Of course during that period too attention was devoted to the technical level and economic effectiveness of the planned enterprises. But nonetheless the basic tasks were: 'to create' and 'to construct.' Therefore a system developed for managing subsidiary institutes that was arranged basically for construction. The basic instruction concerned the composition and policy for development and approval of plans of the USSR Gosstroy; in the structure of the ministries the institutes were under the administrative jurisdiction of the Main Administration for Planning and Capital Construction (GUPIKS); the basic report data concerned production sites put into operation and the volume of construction and installation work on the planned enterprises (in millions of rubles). The price guidelines for planning work were also drawn up in such a way that the cost of planning was almost directly proportional to the volume of construction and installation work and areas. Construction workers predominated in the administrative and personnel structure of the institute. The financing of planning work is carried out through the Sroybank.

In the opinion of another planning engineer, S. P. Frolov (Moscow), error and the subordination of planning and technological institutes led to the situation. "Before 1950 (the creation of the USSR Gosstroy)," he recalls, "planning institutions with technological subdivisions were under the jurisdiction of technical administrations of the ministries, which was quite logical and correct. The main thing in the plan of the enterprise was the technological part, the latest technology, and the achievements of science and technology. And these issues were handled in the ministries and departments by technical administrations. When the planning institutes began to be included in the capital construction services (and subsequently also planning—GUPIKS), they were transformed into planning offices. At the same time branch technological institutes remained in the technical administrations. Technological planning and development of technologies ended up being separated by departmental barriers. It is necessary to restore the branch planning institutions to the jurisdiction of the technical administrations!"

A. A. Morozov suggests: "In order to control planning of 'development' and not 'construction,' it is necessary to restructure the functional apparatus. A possible variant is the formation of a main administration for development by merging the Main Administration for Capital Construction and Planning with the main technical administrations of the ministries and departments.

"Let us take a look at what is taking place now," he writes. "When planning construction, reconstruction and technical reequipment of enterprises one envisions new technological processes and new equipment which does not exist at the time of planning in industrial production (series production), but whose technical indicators are included in the plan. One cannot fail to include them: the effect can be achieved only by being oriented toward the future. According to construction norms and rules, when there is no new technical equipment for the plans one includes the basic requirements for its development. And the development should be done on the basis of a separate agreement that is paid for by the client enterprise from other funds (not the ones attached to the plan). How absurd! New technical equipment, which is the decisive thing in the achievement of planning indicators, is not financed from capital investments allotted to the enterprise for the implementation of the plan.

"It seems to me that the proposal suggests itself: to include in the summary estimated calculation for the development of the enterprise the cost of the development of new equipment and technological processes. In this variant the entire complex of work for planning the development of the enterprises under the control of the head engineer of the plan, the client, and the financing bank.

"One must stipulate at once that it is impossible to carry out this suggestion under the conditions of the existing organizational structures. Branch scientific research institutes and design bureaus that are engaged in the development of technology are financed through offices of the USSR Gosbank (OPI—through the Sroybank) and are under the jurisdiction of the main technological administrations. In this connection it seems that it would be expedient to create in the ministries cost accounting of planning and technological associations in which the scientific research institutes, design bureaus, and planning institutes would operate on one team and the financing of planning and design-technological work would come from a single source according to consolidated all-inclusive calculations.

"As concerns the restructuring of the OPI's themselves, they must be relieved of nonprofile work, leaving for them the role of general planners who carry out the technological and technical-economic parts of the plan, the general plan, and the consolidated all-inclusive calculation, and participate in drawing up the plan for development of the branch (including technical reequipment) and the development of technical and economic substantiations. The fulfillment of the construction part of the plan should be turned over to institutes of the USSR Gosstroy and construction ministries and departments, leaving for the OPI the development of the initial requirements for this part."

"We must not forget about personnel," warns S. P. Frolov. "At first in the technological divisions of planning institutes there were still specialists-technologists

with a large amount of work experience who knew technological planning. Now there are fewer and fewer of them. At the same time not a single higher educational institution is producing them. We need training programs that will make it possible to train planning technologists."

### "The Major Slowdown"

Our reader from Dnepropetrovsk, L. K. Ginzburg, candidate of technical sciences, deputy head engineer of the UkrSpetsstroyproyekt Institute thinks that the lack of correspondence between the economic interests of science and production is the "major slowdown" which impedes the acceleration of scientific and technical progress.

"That will be cheaper," said one manager of a Ukrainian trust when it was suggested that he introduce more progressive designs. And how can one blame him if, according to existing indicators, it is not advantageous for his business to use less expensive designs? Paradoxical as it may be, that which is advantageous to the state as a whole is very frequently disadvantageous to individual enterprises," writes L. K. Ginzburg. "During the 25 years of my labor activity I do not recall a single case when upon consideration of planning estimates the builders made remarks to reduce the estimate. All their analyses of estimates are directed toward increasing the cost of construction, which sometimes doubles as compared to the initial cost earmarked in the planning estimates.

"Naturally since it is not advantageous for the builders to use inexpensive designs with low material-intensiveness and also simpler work methods, any introduction of new technical equipment proceeds with interruptions and over an extremely long period of time. In order to overcome these difficulties we should change over to generalizing indicators that characterize the technical level and degree of renewal of production.

"On the whole this is an extremely useful measure. But again our strivings can be impeded because of incorrectly selected indicators. In the first place, the proportion of progressive decisions in the overall volume of work is extremely arbitrary and will be calculated by the workers themselves and, in the second place, the same thing takes place again: the indicators for planning the activity of enterprises and the indicators for new technical equipment exist in separation, independent of one another. We need unified indicators which would provide incentive to apply technical solutions and would make them advantageous to the enterprises. As M. S. Gorbachev said at the June (1985) Conference in the CPSU Central Committee on Acceleration of Scientific and Technical Progress, it is time 'to change the situation whereby the plan for new technical equipment exists as though in and of itself, having no particular influence on

the indicators of economic and social development. On the contrary, it should become a bearing structure of the entire national economic plan."

The disadvantageous aspect of innovation is also determined largely by the imperfection of methods for calculating the economic effectiveness obtained from them. This problem is considered in many of the readers' letters. The existing system for evaluating the effectiveness of the activity of scientific research institutes and design bureaus has led to a situation where the developer strives not so much to work effectively as to use any means to increase the economic indicators from the introduction of the innovation, and the client looks for ways of confirming the savings (from the letter of Yu. I. Baldin, engineer of the Scientific Research and Planning-Technological Institute of Automated Control Systems of the Ministry of Tractor and Agricultural Machine Building, Volgograd).

"It also happens sometimes that the activity of two organizations is compared in terms of one and the same indicator, but the indicator means different things. For example, it is announced that with the same number of personnel an interbranch organization has provided for an annual economic effect of 8 million rubles while the branch organization has 2 million. At first glance it seems that the interbranch organization has better results. But the zone of application of the innovations is immeasurably broader. Incidentally, this is not all that is significant," he continues "Everything gets into place when the matter reaches the point of deductions into the economic incentive fund.

"It turns out that in the former case there were no deductions from the economic effect and to the economic incentive fund at all and the introduction in no way was reflected in the production cost of the products that were produced, and therefore in principle the enterprises for which the interbranch organization works could find for an economic effect that was several times greater since it did not obligate them to anything. But if it is necessary to establish an economic effect for the production which will then have to be realized in the production cost of the product, in increased output and improved quality, for which it would be necessary to make deductions from the internal economic incentive funds, the client immediately turns into a stingy knight.

"There is also such an indicator as the return per ruble of expenditures on scientific research or experimental design work. From the practice of academic institutes to the scientific research institutes and design bureaus of the branches has come the figure 3 rubles of savings per ruble of expenditures. But this kind of return can be achieved because of two or three subjects which are left over from past years and have minimal expenditures for completion of the developments during the current year. The rest of the subjects could turn out to be ineffective. It seems to me that the indicator of the return per ruble on expenditures should be applied only for evaluating

the effectiveness of an individual development, but it is inexpedient to use it to evaluate the activity of an organization or its structural subdivisions. It is better to apply the evaluation according to the percentage ratio between effective and ineffective developments. There has long been a need to introduce a system for evaluating the effectiveness of innovations that would place all in equal conditions and preclude the possibility of misinformation when calculating the effect, discreditation of useful developments, and elevation of unworthy ones."

A similar viewpoint is expressed by Candidate of Economic Sciences, Head of the Laboratory of Dneprchermavtomatika (Dnepropetrovsk), V. P. Bagrov: "Because of the imperfection of methodological guidelines we operate with an effect that is 'conventional,' 'potential,' but not real. The disparity between the economic effectiveness of new technical equipment and the actual indicators and the lack of an actual influence of the innovation cause moral and economic harm. The consumer does not have the possibility to announce with the necessary reliability what the economic result is from applying new technical equipment, and the developer (along with the manufacturer) in the majority of cases has information only about what should be expected from the introduction of the innovation. Yet his ideas about the amount of the advantage, as a rule, significantly exceed the evaluations of the consumer. Therefore the coordination of the effect again turns into open trading. Under these circumstances the evaluation depends little on the merits of the object of new technical equipment and a great deal on the "energy" of the participants in the procedure of coordinating the economic effect.

"In order for the effect to become a real category, it is necessary to reject the concept of 'potential' effect. Three five-year plans ago the effect of new technical equipment, regardless of its kind, was considered to be the advantage obtained by the national economy throughout the year of the application of the innovation. But subsequently it was recognized as expedient to determine the annual effect from the creation of technical equipment for long-term use as the product of the advantage to the national economy obtained during the full time period of its service and the number of units produced during the first year. It goes without saying that the effect of application throughout the entire period of operation will be considerably greater than for a year. To be sure, when summing up for the period of application according to the existing method (Footnote 1), one should be guided by the principle of 'a ruble today is more than a ruble tomorrow.' Therefore the effect increases in 10 years not tenfold, but four- or fivefold. But the lack of homogeneity in the devices and coefficients for calculating 'tomorrow's' ruble compared to 'today's' makes it possible to obtain several variants of the effect from one and the same measure. Everything depends only on how they are able to use the refined coefficients given in the appendix to the methods."

The chairman of the Kabardino-Balkar Oblast VOIR Council, I. Kuzhmazokov, thinks that in order to increase the return from each ruble invested in science it is necessary to increase control of the results of the realization of scientific ideas. He suggests changing the policy for additional payments for the scholarly degree: before making additional payments for the degree one should find a place for profitable application of the scientific development (we are speaking about applied work projects). "For the author is not paid any remuneration for any invention, even one of genius, until the invention is introduced and produces a real advantage for the national economy. And why should there be any other approach to scientific results?"—he asks.

The imperfection of the methods for determining the economic effect from new technical equipment leads to serious shortcomings in economic incentives for researchers and developers. Complicated themes become disadvantageous, even if they are important ones. Minor themes with an immediate effect filled the thematic plans for scientific research and experimental design work. As V. K. Khorolskiy, scientific associate of the Kramatorsk Scientific Research and Planning-Design Institute for Heavy Machine Building, writes, "The implementation of large scientific and technical solutions involves a risk and, well, who wants to take a risk if difficulties are inevitable? And more is usually said about the risk to which production is subjected when introducing an innovation. But there are also many cases where the developer takes a risk and the enterprise stands to the side. This takes place because of the lack of a defined system of responsibility. Look and see what happens. The client (enterprise or association) sets for the producer of the work (the institute) the task of performing a certain development or planning the volume of introduction. The expediency of the innovation is confirmed by the calculation of the economic effectiveness. The institute is obligated to fulfill the development in observance of the given parameters. But subsequently there begins a transformation and an erosion of contractual relations. The entire problem is that for the institute performing the work the commitments according to the contractual agreement become the production plan, but the indicators for calculating the economic effectiveness a year after the introduction are an evaluation of the result of the work and a condition for incentives for the collective. As a rule, the commitments under the agreement for the assimilation of the new technical equipment are not included in the client's production plan. Frequently they do not even become measures for new technical equipment. Hence the completely different amount of responsibility and different approach by the parties to the fulfillment of contractual commitments. At worst the client is scolded for failure to fulfill a point in the measures for new technical equipment, while the institute performing the work is accused of violation the time periods for work and failure to fulfill the plan, and it is deprived of its bonus. There is only one solution: it is necessary to have equal responsibility on the part of the partners. The institute should

be economically responsible for providing the given parameters and time periods for development, and the client—for the volume of its utilization and time periods for realization."

The general director of the Kation Scientific Production Association, V. K. Skomorokhov, and the chief of the SKTB, G. S. Gordiyenko (Khmelnitskiy) draw attention to the fact that the factor of acceleration of the introduction of the innovation is not taken into account in incentives. In their opinion, this approach leads to a situation where for both the scientific research institute or design bureau and also for the office of the inventions and discoveries it is even advantageous for the introduction to be carried out later, when the sphere of introduction is as broad as possible or to replace technological processes and equipment with new ones. The authors see the solution in making the calculation of the bonuses dependent on the time periods for complete introduction.

Recently a good deal has been done to strengthen the influence of scientific and technical progress on the intensification of production and to increase the prestige of scientific and engineering labor, strengthen its effectiveness, and improve wages for workers of scientific research institutes, design bureaus, and engineering services of enterprises and associations. The measures that have been taken will undoubtedly exert an influence on the creative activity of scientific and technical collectives and will increase their return. But the process of restructuring for new methods of management and control of scientific and technical progress is proceeding slowly.

"To a certain degree we have managed to overcome passivity, to increase responsibility and organization, and give more space for initiative," noted M. S. Gorbachev at the June (1986) Plenum of the CPSU Central Committee. "Yet in enterprises, in the sphere of management, in scientific institutions and creative collectives, and in the activity of party and soviet agencies the process of restructuring is proceeding with interruptions, old approaches of pulling in the opposite direction, and inertia is still strong."

The editorial mail concerning problems of scientific and technical progress shows that EKO readers see great potential possibilities of accelerating the restructuring in the control of scientific and technical progress. One must hope that their opinions and suggestions will be given attention by the appropriate organizations.

#### Footnote

1. The methods (basic provisions) for determining the economic effectiveness of the utilization in the national economy of new technical equipment, inventions, and efficiency proposals. Moscow, "Ekonomika", 1977, p. 8.

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#### Workers' Needs at Industrial Projects Stressed

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[Article by Tatyana Boldyreva and Valeriy Lavrov under the rubric "Eko On the Yenisey": "Man—After..."]

[Text] The 27th CPSU Congress has earmarked a principal position—a change in the direction of man, his interests and needs. But this change is not easy; it is difficult to overcome the approach to these problems as secondary.

...In 1986 the waiting list for housing in the Krastyazhmash PO was approaching 3,600 while the number of workers was about 8,000, and at the Sayansk Aluminum Plant it exceeds 2,000. Of course the people waiting for housing are not out on the streets. They are living in dormitories and in the private sector, and they are waiting for individual well-arranged apartments.

#### A Paintbrush Instead of Keys

How much time does it take for the rank-and-file worker to obtain keys to an apartment? It is considered an achievement at Krastyazhmash that all people waiting for individual apartments since 1982 received them at the beginning of 1970. And at the Sayansk Aluminum Plant in 1986 they "closed down" a list of approximately the same number of years. This is on the whole. But if one looks at the production of welded machine building structures of Krastyazhmash, out of the 400 people waiting for an apartment during the year only eight received one, that is, the last in line had to wait...50 years. In the capital construction administration of Krastyazhmash, with a waiting list of 60 people, one can wait 60 years. The same sad arithmetic is to be found in other shops and divisions. And at first glance the explanation seems quite simple—the growth rates of the number of people employed at new enterprises are accelerating, which is not happening in housing construction. But out of this simplicity there arises a problem that is not simple—the plans for housing construction and their fulfillment must be oriented toward the number of workers and their need for apartments. The economics of construction has not yet risen to this height. The arrears begin with the plans.

And the Sayansk Aluminum Plant, for example, nonindustrial facilities comprise only 5-6 percent of the capital investments for the 12th Five-Year Plan. The startup of new production capacities is coordinated only with the plant infrastructure. And the opinion of specialists is unanimous—not a single aluminum plant in the country has been constructed so intelligently: first they introduced all the auxiliary shops. At Krastyazhmash under this five-year plan they will construct two more large

shops, practically two plants. Even today it is clear that it will be necessary to hire 5,000 operations workers here. And the problem of providing them with work seems simpler to the directors of Krastyazhmash than the problem of providing them with housing. Here there are more problems with the production infrastructure than at the aluminum plant, but the startup of capacities and the increased number of workers are not coordinated with the introduction of housing either.

"We hire newcomers here with a probation period," the deputy chiefs of the personnel division of Krastyazhmash, T. M. Khadkevich, told us.

"Apparently, this is the rule: it is necessary to see what a person is capable of doing and find work in keeping with his abilities and qualifications...."

"No," she rejected what seemed to be reasonable ideas. "I am speaking about moving into the dormitory. We wait a month to see whether a person can move in, whether he deserves it. We used to move them in there, and they would get drunk and act like hooligans."

"But where do they live?"

"They rent a corner of a room from relatives."

The assistant director of the Sayansk Aluminum Plant for domestic affairs, Yu. S. Shinarev, did not speak about any probation periods:

"We have constructed quite a bit—150,000 square meters of housing. But just during 1985 the collective doubled. And they come here, naturally, without housing.... People bring their children with them when they come to me to be hired, and I do not even have service apartments for the yardman...."

The plans for housing were not fulfilled either in Krasnoyarsk or in Sayanogorsk. At Krastyazhmash in 1979 through 1983 there were more than one-third of the housing envisioned in the plan was put into operation. In the strategy of housing construction, although it probably cannot be called strategy, one can see only a desire to do something somehow. When the construction was started not enough housing was constructed and that which was constructed basically went to the builders. It is logical: there are difficulties finding them in the area and they will not come without housing. During the past 2-3 years the plans for the introduction of housing have been fulfilled. How?

"In 1986 70 percent of the apartments were made through their own forces," said the chairman of the trade union committee of Krastyazhmash, L. L. Chernov. "The finishing work, of course. The new settlers we could not plaster, whitewash, paint and so forth hired builders with their own money."

The plant workers also did the final construction operations in the movie theater with their own forces. "Self-construction" is becoming widespread. At the beginning of 1986 there was discussion about the fact that the builders were turning over 24,000 square meters of dwelling space to the clients so that they could finish them themselves. By the end of the year this figurehead almost doubled. The "individual" contract plus the organization of work of finishes on a second shift plus the mastery of occupations that are far from related—any person working at Krastyazhmash who is expecting an apartment must be prepared for this.

### **The Door Is Locked to the Invited and the Uninvited**

And the plant committee of the aluminum plant they are not closing the lists for regular (1,600 people in the plant), priority (5,000 people), ORS (300) and certain other lists.

"Here, for example, are the 'priority candidates'—families with 3-4 children. They do not have much work tenure—only a year or two at the plant," explains the deputy chairman of the plant committee, A. T. Khomenko.

"But where are they living?"

"In the dormitory...a very difficult situation. 'Draftees'—specialists invited from other aluminum plants must be given apartments immediately, and in 1986 the plant received 170 apartments.... But in the production of roasted anodes alone it was necessary to invite 1,200 people. One-third of them have already come and there are 800 more.... They will get all the apartments, and even the priority list will not move."

The "privilege" of standing at a locked door is a common thing in Sayanogorsk, the more so since the USSR Ministry of Nonferrous Metallurgy has placed the formation of the collective on a directive basis: every aluminum plant of the country has received a plan for "delivery" of skilled workers and engineering and technical personnel to Sayanogorsk. And this plan is being fulfilled: people have already come who will be working in the shops but do not have a roof over their heads or even foundations.

At Krastyashmash the situation is somewhat different. The collective is formed almost randomly, without any special intervention from the USSR Ministry of Heavy Machine Building. When they find the next manager for one position or another frequently it is someone who has "gone wrong" in the European part of the country and has been sent here for "correction." The door was closed to voluntary engineering and technical personnel in 1986; hiring was stopped completely. Even so, it seems, there are too many of them: one engineering and technical worker for two regular workers. To be sure, in such

a period, as certain specialists think, the ratio between workers and engineering and technical personnel should be the opposite, if one were to think about the future.

"Locked" doors in solving personal problems at Krastyazhmash, as distinct from the Sayansk Plant, they have preferred to drape the "locked" doors. So there was no information about the waiting lists. "Should they post or not post the lists of those who are waiting for an apartment?"—such were the debates with the participation of workers of the kray trade union council. Now here they also want to see the lists of those who are receiving housing. So far they have received no results.

The average age of residents in Sayanogorsk and Solnechnyy—the plant village of Krastyazhmash—is 26 years. These are quite different people from those who built and assimilated new enterprises 30 years ago. They have different ideas about life, different demands, and a different level of education....

They live in nine-story buildings. Here, for example, is information about one such tower.

Passport Use dormitory Krastyazhmash PO. Address—Solnechnyy Boulevard, 11 Address—Solnechnyy Boulevard, 11 580 people live there: 205 men, 292 women, 86 children. 144 people have higher education; incomplete higher education—17; specialized secondary—161; secondary—130; incomplete secondary—16.

Next to the Passport is another piece of wall with the title "Advanced Production Workers" which is covered with a poster—"Give Sobriety!" It will be quite possible to hang a poster saying "Give 86 Apartments!"

In one of the cities on the BAM planners estimated that 20 percent living there would have families and 80 percent would be single. The real ratio turned out to be the opposite. Solnechnyy and Sayanogorsk are built up with nine-story panel buildings. They say it is the latest series, but it is the same series as all the rest because the basic component—cement—is gray, although in some places the inventions are covered with cement of all colors of the rainbow.

From the office of the assistant director for domestic services of the aluminum plant we look at an immense residential building.

"In one entryway there are nine two-room apartments and an equal number of three- and four-room apartments, and there are also five-room apartments," Yu. F. Shinarev shows us. "Each entryway has only one one-room apartment. For the elevator operators."

"We have no problems with five-room apartments. We do not have anyone to whom we can give the four-room ones either. We fought to get permission to construct a nine-story building with two entries for small families," says the deputy general director of Krastyazhmash, V. V. Shpet.

For whom are these buildings planned and constructed? So that the families can move from the dormitory to a "commune" of the 1980 model? And sociologists and demographers established long ago, the family is becoming smaller but the sizes of apartments have continuously increased during the past 5 years and on an average throughout the country a new apartment has almost 55 meters of space.... All of these apartments are acquired by the small "leaderships" and the small number of families with many children, and the remainder are occupied by the so-called "subpopulation." In Sayanogorsk, where the plant has only one men's and one women's dormitory, these apartments were transformed into dormitories long ago, and in Solnechnyy the procurator's office tried to solve the problem of the new "communes" by requiring that 211 "subletters" be excused from the waiting list for apartments....

"We will never be able to solve the housing problem using our current methods," thinks the director of the Sayansk Aluminum Plant, V. V. Strigo:

"Let these young people become builders and first build their own cooperative apartments or individual homes and then work at the plan. And not dwelling space for today's apartment rent, but their own. Give them credit for 20 years and give them materials and machinery.... And when they come to work at the enterprise they could have housing on credit and live, work, and rear their children. For otherwise—without good organization of labor and life—it is difficult to draw personnel to the developing regions of the country. Someone from Tajikistan will not come to us: there he lives with his father and mother, he has housing, and he can get married. But what do we have to offer him?!"

The general director of Krastyazhmash, Yu. P. Yushkov, agrees with V. V. Strigo, adding: "Money for credit for an apartment, furniture, and an automobile should be included in the estimated cost of the enterprise."

If the problem were solved as they suggest they would undoubtedly not construct "communes" but would construct apartments and houses of the kind that are needed by people 20-30 years of age.

### From Temporary Housing to "Temporary" People

The "temporary structures" and buildings which house, for example, the directorate of the aluminum plant and the Sayanalumintyazhstroy Trust, the directorate and service of Krastyazhmash, and all kinds of other temporary structures are simply trivial parts of life on the social plane. A person who comes to a construction site or a

new enterprise is simply confused by the word "temporary" everywhere. Temporarily poor housing, temporarily low wages, temporarily no medical treatment, temporarily no place to put a child in a kindergarten, temporarily there will be no "movies"...temporary difficulties! Some people "burn up" in their flames and others, to replace them, burning with the desire to do everything differently from their predecessors. But what can be done differently and how?

For a certain amount of time the manager of the Sayanaluminstroy Trust, O. D. Ashirov, liven things up in construction. He applies target management methods at the industrial site and is convinced that the industrial facilities will be put into operation without interruptions or extension of the time period. He can discuss and demonstrate everything with enthusiasm and proofs. But as soon as the conversation comes around to housing construction, to the affairs of his trust in the city, Ashirov openly changes the tone and loses interest. The city microrayon...not a single microrayon has been completed in Sayanogorsk in two five-year plans, even with the participation of such a powerful organization as Sayanoshushenstroy. Any of them is much simpler than the Sayano-Shushenskaya GES or the plant within a plant—the production of roasted anodes, where O. D. Ashirov feels quite at home at the construction site.

"But what do you intend to do with the city?"

"What can we do with it?" says Oleg Donovich. Everything is extremely confusing there. The unified city builder—the OKS of the aluminum plant—is not in charge of the situation. The city has several "feudals" among whom the Gorispolkom divides up the streets. And everything is done very slowly: for example, they have been receiving construction elements for the school for 2 years and it is not clear when they will all be here.... We are also slow in constructing the hospital complex.... There is nobody in charge in the city. Should we create a trust for the city? We do not have the money to create a trust...."

The situation is now changing for the better. At least they are not taking people away from social, cultural and domestic facilities and sending them to the industrial construction site. But it will take a good deal of time to make up for lost time. At first glance it seems that such powerful construction forces, and specialized ones, too, have gathered in the village of Solnechnyy: one housing construction combine is constructing housing, another is constructing educational facilities, kindergartens and schools, one trust is constructing the hospital complex, another trust—a state vocational and technical school and a dining room.... But they are being constructed "in passing," along with dozens or hundreds of other facilities in Krasnoyarsk and the kray. And there is one person in charge, and the thrust is the same.

And it could hardly be otherwise: on the scale of the kray these are small construction projects and not primary ones. Such an attitude is clearly, but more frequently not clearly, felt when there is occasion to speak with workers of the CPSU kraykom and krayispolkom. In our considerations about the fact that Krastyazhmash is sharply advancing the low-level machine-building culture and SaAZ will be a flagship of the aluminum industry, seems like mysticism in terms of the realistic programs for the development of the kray.

Let us consider the programs of the long-range buildup of Krasnoyarsk during 1983-1985 and the period up to 1990. It has a section under the title "Solnechnyy," but one only gets a sense of vagueness when studying this section. Of the 1,324,000 square meters of housing, 320,000 were constructed by 1987. Of the nine schools they provided three. Of the programmed 8,863 places in kindergartens there are 2,160. According to the "program..." Solnechnyy failed to receive in 1986 a house of daily life, a covered market, and a preventive medical facility. In 1987 the residents will not receive their house of culture and the trade center, marriage palace, swimming pool, laundry and other things that were to come in other years appear to be near fantasy....

In Sayanogorsk there was no special program but the situation was the same, beginning with the temporary water intake. Let us note that the plant has permanent water supply. The provision of schools is 81 percent, kindergartens—53 percent, hospital beds and polyclinics—46 percent, stores—60 percent, and libraries—0 percent as compared to the unionwide norms for what a resident of such a city should have. And the small construction forces make the city "fathers" throw up their hands when the discussion comes around to the five-year plan: "Who knows what will happen?!" Even the capital investments for these purposes, which were reduced because of nonassimilation, at today's rates will not be assimilated before the end of the century....

"We also have 'zero percent' of the following as compared to the Construction Norms and Rules: bath houses, laundries, libraries," says the chairman of the Krastyazhmash Trade Union Committee, L. L. Chernyov, "and the provision of kindergartens is 45.6 percent. Each year there are 500 pregnant women and 1,937 people staying home with children. They go to school without ever having been in kindergarten."

"Here it is—a reserve of finishing workers," we thought. There are undoubtedly certain "sunny" spots in Solnechnyy. The situation with the school is normal, they have their first park with a swimming pool, a polyclinic, 5,717 square meters of trade area while the norm is 2,400.... There are the same kinds of bright spots in Sayanogorsk.

"We are constructing six new cities!" they say in the kray administrative agencies. "Six!"



And there is not a single one of them where the person would be comfortable "from his first days."

"All these objects are being constructed without enthusiasm," says the chairman of the Sayanogorsk Gori-polkom, N. N. Bugayev. "And what is happening in trade? There are no refrigerated facilities, we sell things right off the transportation. There are no storage facilities...."

"It is not merely a matter of enthusiasm," said the chief of the Krastyazhmash Capital Construction Administration, D. V. Belyanin. "The documentation for a refrigeration facility for 1,000 tons has been lying around for 5 years and has become outdated. The construction elements included by the planners do not even exist any more. And such was the destiny of the documentation for almost all of the social and domestic facilities. It must be discarded and we must start over."

When looking at these cultural-social-domestic achievements of the new enterprises and cities one automatically comes to the conclusion: here they do not need new people with demands, even at the unionwide level. Here they do not need family people. Here they do not need permanent people. Or rather, they need them, and very much, but it is so difficult to deal with them. And managers of construction organizations have long realized these criteria in practice. The majority of builders in Sayanogorsk and at Krastyazhmash are bachelors or temporarily bachelors who have come for a couple of months, or a maximum of 2-3 years from various cities. They have occupied all the plant dormitories in Sayanogorsk. Five-story buildings—dormitories in the outskirts of Solnechnyy—are being constructed for them as quickly as possible. These temporary people do not ask complicated questions and do not complicate the life of the construction site which is already complicated to begin with.

One cannot do without temporary people in the shops. But the management, while having no possibility of solving housing and social-cultural problems, is trying to attract temporary people here as well. They can perform only the simplest operations. But there are so many problems at new enterprises that it is all they can do to solve today's, without thinking about tomorrow's. And without thinking about the fact that they will generate even more problems the day after tomorrow....

One can see no end to the construction projects; only the first sections of the enterprises will be introduced at the end of the five-year plan. Sayanogorsk cannot restrict itself to being the kind of "male" enterprise that the aluminum enterprise is; it is necessary to construct enterprises for women as well, but it turns out to be more complicated to bring skilled builders with families here than it is to bring thousands of temporary workers.

Permanent, skilled workers need daily work and not complete days of idle time for various reasons. They need good wages, and not a tariff. They need a completely different kind of supply of materials and perhaps also different construction materials, different machines and mechanisms, different managers, and a different, new life. And openly relying on a temporary work force makes it difficult to create a serious construction industry and build their own housing and social, cultural and domestic facilities.

### Overcoming the Difficulties! For Lower Pay?

Work days at existing shops frequently begin with discussions about wages, and they end with the same thing. We have already seen that for newcomers the "doors are locked" in the dormitories, in the new residential buildings and in the kindergartens, not to mention such a "luxury" as swimming pools, sports facilities, and libraries....

Wages at new enterprises are another "sore" of the social climate. They are based on norms and organization charts in effect in the country. But at new enterprises everything is different from how it is at established ones, and the workers are of a different age. They are young people, frequently with only one suitcase.... They should be paid more, they should be given long-term credit from the enterprise, as is done in other socialist countries, for setting up a household, an apartment, children. But....

In Moscow Krastyazhmash is considered to be an ordinary machine-building enterprise where one should earn no more than at Uralmash or Zhdanovtyazhmash. But there entire days of idle time of brigades are emergencies while here they are a normal phenomenon: cast pieces have not been shipped over thousands of miles. People are paid to do nothing while in other places all one need do is mention piece rate and even engineering and technical personnel from the divisions transfer there as workers. Wages, money, about which people are accustomed to speaking in passing, and certain managers regard the first thing they hear about wages as "greed"—all this is a part of our life. And at the new enterprises at best the people earn no less than they did where they came from.

The head bookkeeper of the Sayansk Aluminum Plant, A. G. Starikov, says:

"in terms of wages we are not among the leaders, although we assimilate the latest technology, and this is a difficult thing to do. Some losses are planned, but we are 'overfilling' the plan for losses, in 1985 by more than 2.5 million rubles and in 1986 we had more losses than planned (24.6 million rubles). We receive low-grade metal and the new equipment frequently breaks down, although we have gathered highly skilled workers. And there are many other expenditures that are not being recouped yet. Therefore we have no material incentive fund. But it is difficult to speak about wages with



people.... We have produced the first metal—and people look at us like an ordinary operating enterprise. But the conditions and the economic conditions are quite different. Everyone everywhere agrees: yes, it is difficult for you. But why should our workers receive less than they did where they came from?"

Hopes that in the new place there will be new wages are usually frustrated, especially if an electrolysis workers of the fifth or sixth category goes to Sayanogorsk, or a machine tool operator goes to Krastyazhmash. And the majority of the managers do not have better wages either, all they have is a mass of additional problems. When changing over to new enterprises with a higher position, the managers also receive a higher salary. But when they find the time (and usually they do not find this time) to analyze their earnings at the old enterprise and at the new one, in the final analysis they do not gain anything. Information about the bonuses from the division for labor and wages of Krastyazhmash suddenly floats through the departments and shops and is perceived as manna from heaven.

At the Sayansk Aluminum Plant the highest paid group is the electrolysis workers.

"Half of the equipment is in repair, and the metal is cheap," says the brigade leader S. N. Deynitsyn. "Low grade. We receive a tariff. No bonuses. And children?! I have a little daughter who can play the piano, but here there are neither kindergartens nor music schools, and the children run wild in the streets...."

In the electrolysis shop the conversation is direct: no metal—no earnings. In the mechanical repair shop of Krastyazhmash the discussion of wages is just as vague as that about housing, but the essence is the same—no products, no incentive funds, no bonuses.

And a strange picture obtains if one breaks away from the everyday life of these enterprises. Millions of rubles are spent for future products and hundreds of millions and tens of millions of rubles are placed in the column of "losses for the year" for the sake of obtaining products. So far—in very small quantities. These losses are justified by temporary, "crude" untested technology, and failure to deliver cast pieces and hundreds of other kinds of batching items and raw material. But there are also losses because the turnover is great, and there are not enough skilled workers.

Thousands of people are taken away from their permanent homes. What draws them to the new enterprises? Hopes of a new standard of living—a higher one, a new apartment, more interesting work.... Understandably, nobody expects that the "standard of living" will be given to them on a platter. On the contrary, the people are prepared to wait and prepared to adjust their goals. But nothing is adjusted for their goals, even for the goals of the general directors.

In ministries they know what they want and they know what is wanted of them. So why not conclude a contract in 1987, 1988, 1989.... The director Yu. I. Yushkov or V. V. Strigo should do the first...second... third...and as a result they will be given a higher position, higher wages, an apartment in Moscow or that which can still be designated by the word "career"....

"Yes, yes, it would not be a bad idea to conclude a contract with people going to the new enterprises," a board member of the USSR Ministry of Heavy Machine Building, L. A. Busyatskaya, agrees with us. There are possibly people who agree in other Moscow offices and in faculties of the USSR Academy of the National Economy.... But, probably, not all of them: an eminent scholar in the area of management said that "obtaining wages is already a contract."

Incidentally, will there really be wages? But what kind? For workers it is difficult to predict and it is impossible to plan. And even more unpredictable, although it seemed to us that they were planned in our day and quite accessible to be included in the "contract," were these conditions:

- by what date will the individual receive an apartment (or room);
- when will he be able to put his child in a kindergarten?
- when will he be given a plot of land for a garden or an orchard, and where;
- when will he be able to purchase a quart of milk every day (in Sayanogorsk it is sold only to families with children up to a year of age)....

The contract could include all the goals of the individual and everything that is expected of him in the new collective and in his new work place. This is clarity, this is coordination of personal goals and collective ones. But with the current work of the personnel services of the ministries and enterprises, all this looks like utopia. The personnel services of the USSR Ministry of Heavy Machine Building, Ministry of Nonferrous Metallurgy, and Ministry of Heavy Construction are optimistic: "There are no problems and there are more people who wish to go than we can hire at the new enterprises." The construction sites are considered to be youth-Komsomol ones and they can name the number of detachments that have been sent there during these years....

"What detachments?" the personnel workers of the construction projects ask. "A month or two—and then vague memories of them. It would be better to have families and immediately give them apartments in everything they need, but here we hire them and fire them. There are as many problems as there are people! Only we have no time to delve into this and figure it out. And the main thing is that it is not for us to solve their problems!"

Even the head specialists of the new enterprises are no exception with respect to the attention paid to their problems. We spent a long time talking with one of them trying to understand why he was leaving and what was keeping him from working. And it turned out that this specialist was forced into doing trivial work having to do with the output of products and he resisted because he thought, and not without reason, that it was not his business to engage in dispatcher work. He could not find a common language with one of the directors of the enterprise and the director could not find time to speak with him and explain what happened to the man. For the sake of fairness, one must say that the directors of our enterprises simply do not have time for "human" problems. It is necessary to build and change technology, and to find batching items. It is necessary to produce products. Directly dependent on the output is the enterprise's economy, the material incentive fund, and thus earnings and personnel turnover. To be sure, if more attention were devoted to people many of the problems with the output of products would not exist....

"I ask to be released at my own request because I have had no earnings for a year and I do not like that," writes an electrolysis worker from SaAZ. It is a pity that a skilled specialist is leaving. It is not his fault that in Bratsk, where he worked previously, the technology was developed and there were bonuses. It was suggested that privileged conditions be created at the new enterprises for the formation of a material incentive fund. Temporarily, until the enterprise got on its feet. Although there is nothing more permanent than the temporary. Perhaps it would be better to reach a point where the enterprise got on its feet from the first days of its operation, and operated normally from the first days?

### A "Dead Zone" for New People

The deputy general director of Krastyazhmash for capital construction, M. T. Gordeyev, says:

"We do a lot of construction, but they receive apartments and then leave. They must make it so that if they leave they release their apartment."

"Or they must work out a certain period of time for the apartment," the general director, Yu. I. Yushkov, supports him.

"We give them apartments and the people leave"—this is a fairly popular idea but one which masks the real state of affairs. More of the people who leave have not received housing. In housing and social-domestic affairs the directors of the new enterprises are powerless and have no rights before the local authorities and construction organizations who solve many of their old problems as the expense of the new enterprises.

Here is a Volga taking the general director of Krastyazhmash along the Yenisey tract. The local state automotive inspection arranges a "hunt" for this vehicle, and not so

that the director's driver will observe the rules of traffic, but so as to obtain apartments or places in kindergartens or something else. There are also less obvious "hunts" for the directors of these two enterprises. Party, soviet and management agencies also participate in them. Some legally, some beyond the limits of the law, and some as though they were in the Taiga. And the results are in evidence. Of the 1,000 apartments constructed in 1986 using capital investments of Krastyazhmash, the plant received 400, and of the 500 apartments constructed in Sayanogorsk in the same year using the money of the aluminum plant workers they were given 170. In both places the apartments have long been "small change" for the administration.

In Sayanogorsk the aluminum plant has 656 apartments, the gorispolkom was given...without compensation in money or anything else 1,134, and the construction workers were given 1,127. In Solnechnyy only a proportion of the residents are Krastyazhmash workers. Every person looking at the aluminum plant could have a two-room apartment and everyone looking at Krastyazhmash could have the same were it not for the "legal experts" and "hunters" from everywhere who have apartments, places in kindergartens and places in Pioneer camps.... There is one desire: to obtain the maximum from the new enterprise and to give it the minimum.

Everyone is so prepared to "hang" so much on the new enterprises that it seems an experiment is being conducted—how long before these enterprises will break under the additional load.... The gorispolkoms and rayispolkoms conduct themselves in a unique way. In Sayanogorsk the city authority has taken on only the construction of the house of soviets. In Solnechnyy it has taken on nothing. To be sure, two buildings in Krasnoyarsk and one kindergarten have been put on the books of the local agencies. This is a position of observation and beyond criticism—but the Sayansk Aluminum Plant constructs the housing and municipal base of the enterprise to serve the city and then perhaps we shall solve these problems.

In the client ministries they advise: "Why have they not yet built a dining room in Solnechnyy? Why have the construction workers been unable to construct even personally for themselves 76,000 square meters in the first 2 years of Krastyazhmash, and have constructed only 16,000? Why has DSK-3 in Krasnoyarsk essentially collapsed? Why is there a housing catastrophe? Why are there constant arrears in nonindustrial construction? Why are they assimilating only half of the funds for social, cultural and domestic purposes in Sayanogorsk? But this is ministerial-lyric," and the prose is the introduction of industrial objects. In any shape in any ministry they know no less than they do at the enterprises. And it is understandable why the industrial construction has always outstripped and still outstrips nonindustrial construction in terms of rates, expenditures, and even quality.

Nor is it anything new that the client ministers are more willing to go to regions where they have to spend less on the "human factor" and the deputy minister, P. P. Selskiy (Uralsibpromstroy) answered our "housing-social-domestic" questions succinctly:

"This is a regional problem."

In the political report of the CPSU Central Committee to the 27th Party Congress it said: "The local authorities take responsibility for all spheres of life on their territory. If someone can say: this is my problem, for the councils this statement is unacceptable. Housing and education, public health and consumer goods, trade and the sphere of services, public transportation and the protection of nature—these are their vital concern." Unfortunately, in new cities this concern is especially necessary. The councils, not having their own resources or material base, are obviously trying to shift them to the plant or to whomever they can. In the USSR Ministry of Nonferrous Metallurgy in the USSR Uralsibpromstroy there are all the administrations except for an administration for the standard of living for the hundreds of thousands of people employed at these enterprises. And everywhere in the ministries they say: "There are local organizations, let them handle this factor, and you will give them the money, the resources and even the people."

But what is in the region?

Does Krasnoyarsk Kray need new enterprises? There are no human resources in the kray. The kray's construction industry can barely solve the problems of the old enterprises. And if they solve problems that are many years old at the expense of new enterprises this is a phenomenon as natural as a ray of sunlight. And the people of the new enterprise, especially one with so many people as Krastyazhmash, fall into the "dead zone": the branch shifts the concerns about them to the local organizations and the local organizations solve their own old problems at the expense of the new enterprise. We do not judge them: these problems also must be solved somehow, and the local budget is nothing against the background of the capital investments in the new enterprise. And the territorial-branch disputes first die out and then arise again, and in the meantime the responsible Moscow and local leaders divide up the sphere of their influence and the people run from the new enterprises: they have lived without an apartment and have "gotten burned," they have received an apartment but do not receive enough money and have "gotten burned," they have been burdened with a child—and have moved closer to their parents. They will not be enticed to a new construction site a second time. A city without a "papa."

The new enterprises begin with the selection of a site for them. It is very hard to get land even in Krasnoyarsk Kray when it comes to a large enterprise. For a long time there has been no land that does not belong to somebody.

And so there arises the idea of a new enterprise. It arises in Moscow in some office where they talked about the prospects of the development of one branch or another. Then the gazes are turned to the territory—the kray or oblast. They take into account first of all the capabilities of the construction works: nowhere is there a surplus of construction capacities or personnel, but some can take on additional volumes. In this stage the individual who will work at the future enterprise is a fairly abstract concept. There will be an enterprise and there will also be people.

The enterprise is "secured" in spite of the fact that the village cannot be constructed next to Krastyazhmash, and certainly not next to the "ecologically pure" aluminum plant. Where is it more convenient for a person to live—this is not a question. The heads are thinking about something else: where is it more convenient to build? Krasnoyarsk is supposed to be a city of a million, and since its city limits will be approximately here, here will be the village of Solnechnyy. Sayanogorsk is one of three villages for the builders of the Sayano-Shushenskaya and Maynskaya GES's. It would be excellent, of course, to have the future aluminum workers live on the other bank of the Yenisey in the forest, and money for a bridge would be found, but this would already be the fourth village, and we would have a city. It is not important that both the city and the plant "sit" upon the most unique gravel deposit (a 20-meter layer of gravel), it is not important that the city would be crossed by the winds of the Khakasian steppes, nor is it important that it is quite a ways from the Solnechnyy residential area to work (11 kilometers). The concerns of the future residents of these places—they are their concerns.

The fact that man is secondary to production is constantly being emphasized to no purpose, regardless of how accidental this may be. It is difficult to imagine what could be done today at a construction site without electric energy. The construction site rises up. But the first building in Solnechnyy was inhabited without electricity. This is already history and it cannot be rectified, but it is a different verse of the same song: everything for the sake of production: we are standing in front of an attractive billboard in Solnechnyy. "Basic Production Capital...Capital Investments...." Many millions before 1990. And what will there be in Solnechnyy by that time, we did not find a billboard that told us that.

"We should not have to deal with housing and social, cultural, and domestic services!" says the director of the Sayansk Aluminum Plant, V. V. Strigo. "There are local administrative agencies and the gorispolkom—let them handle all of that and create a standard policy in the city. I am prepared to give them the money and the residential buildings and everything else...."

"No," they say in the city council. "Strigo is obligated not only to give shelter to his workers, but also to feed them, entertain them, clothe them, transport them, and even collect the garbage...."

In another part of the city the directors of the Sayano-Shushenskaya GES are in charge and a third part of the city is being developed by marble excavators and geological prospectors. In the fourth "master" of the city are the owners of private homes. In the USSR Ministry of Power and Electrification, the USSR Ministry of Non-ferrous Metallurgy, the RSFSR Ministry of Geology, and the USSR Ministry of the Construction Materials Industry they clearly do not think about the fact that they are also building a city. This is why they are so neutral. The position of the USSR Ministry of Communications is original: "You construct for us a post office and a telephone station and get everything working, and then we will take it on our books and begin to service it...." And it is necessary to call the city to a switchboard and only a couple of units of equipment have been installed....

How will the city be like a city if the general planner—LenNII Pgradostroitel'sta—has done the general plan without local coordination? It was drawn up without even leaving Leningrad," says the head architect of Sayanogorsk, I. V. Korobitsyn. "The city is being built up with a new series of buildings, but the quality of the construction is so poor that the only solution is to paint panel buildings. Just outside the city are the mines of the Sayanmramor Combine and there are many wastes there, but it is not permitted to utilize them in keeping with the instructions of the Gosbank. It is a cemetery of valuable stone! We have three young architects and if they could have their way they could make a City and not an accumulation of gray buildings. And they have 'made' it in pictures, but it is impossible to realize anything for they need a cost accounting artistic shop, they need workers, right down to the mason, and they do not need intervention from high places in our work: this will have to be beautified in one way or another. Having sketched a beautiful city which it seems nobody needs, our minicity planners are thinking about their own life: we have no 'papa,' as the children say."

And Sayanogorsk grew up not according to plan, even those sketched at a distance of 3,000 versts. The Sayano-Shushenskaya GES was constructed and all the "municipal services" were to be in Meyn and Cheremushki, the model cities of the hydraulic construction workers. According to the general plan no city was envisioned and there was to be a village of a thousand for the four. But by the time the plant was "planted," three microrayons had grown up and there were 16,000 residents. The railroad intersects the city across from the House of Soviets—there are concrete garages and the cows wander about....

Yes, it is noticeable that there is no "papa," throughout the entire city. In a year they managed to create 500 meters of asphalt roads and sidewalks, and between the buildings there are empty spaces where something will be constructed sometime. Planned for 140,000 residents the city is walking into the unknown future, although today it is already known that there is no place for the wives of

the aluminum plant workers to work (the plant is a male enterprise). There are discussions about a sewing factory.... Yet the standard of living of the family people in Sayanogorsk is objectively lower than in those places where the people came from. The earnings are not higher and many of the wives are not working. They could be employed in well-developed enterprises of the infrastructure, but....

"The funds for the 'municipality' have been cut almost in half for the 12th Five-Year Plan, education funds have been cut by 2 million rubles, and public health has been cut by a factor of 1.5 as compared to the initial plan," a senior engineer of the OKS of SaAZ, Yu. V. Politova, told us.

At Krastyazhmash in the UKS they are giving approximately the same figures for reducing funds for nonindustrial construction. And when people look at the ingenious curved long nine-story buildings of the plant village, people say in confusion:

"And what wise men did the general plan; our ancestors will curse us. You can't drive up to the entrances, there are no squares or boulevards, and one could freeze to death walking—around these multistory loops."

The orientation toward the priority of industrial objects leads to a fairly strained social life for the new enterprises. At trade union report conferences of directors they cast out notes about housing, kindergartens, city planning, and so forth. And when responding to them the managers of enterprises frequently lean in the direction of kray indicators, which are worse than in other krays and oblasts and in the country as a whole. The most serious question when communicating with the people is: "Do you think about the future of the collective, the village, the city?" And hearing the cheerful answers of their managers, who are thinking mainly about the production capacities and the output that is to be taken from them, the people think about the policies and the propriety of those who have set these policies.

### **If It Is Difficult With People, Try Working Without Them**

As M. Ye. Saltykov-Shchedrin wrote, "Man is a social animal, but in Zamanilovka he is obligated to go wild temporarily." In certain policies in the new enterprises, it would seem, were intended for "temporary wildness" of completely cultured people. Thus at Krastyazhmash they divide up the meat not on the basis of the number of mouths to feed, but on the basis of the number of workers. The very procedure for obtaining meat looks as follows: the carcasses are distributed among the shops where special butchers are assigned, and then the pieces of meat are wrapped up in materials intended for packaging excavator parts and are delivered among the buildings. In Sayanogorsk they simply put a truck on the street and sell sausage from it so that there will be no crowds in the few stores that they have. In Sayanogorsk 1,200

people want to augment their food supply with their own garden plots, and they have been given help in obtaining land in the mountains 15 kilometers from the city, where explosives are needed to prepare the plot, and dirt must be brought in from the steppes, which begin immediately outside the city. Located on these steppes are sovkhoses that do not give the city that which the new residents were easily able to obtain in the places where they came from. At Krastyazhmash, in order to get special milk it is necessary to walk about 20-30 minutes one way. In the plant committee of the aluminum plant they got an idea: the sanitary and epidemiological station is threatening to close down the kindergartens where instead of the norm of 600 children, they have 850. In five of these kindergartens of Krastyazhmash they have more than the norm of 780, but so far the sanitary and epidemiological station, possibly hoping to obtain an apartment from the plant as well, is not threatening them.

Nothing can bind a person to an enterprise if they do not treat him humanely. And this treatment consists not only in tactfulness and the accessibility of managers of enterprises and higher organizations. It is possible to explain to a person everything that is taking place around him and it is possible to convince him. But a situation in which the living conditions are not improving but, on the contrary, are deteriorating, for in the first years they received housing more quickly than they did in all the rest of the time—people cannot understand this situation and they will not accept. In Sayanogorsk, for example, the consumption funds, according to data of the city plan, were frozen at the 1980 level, although the population has grown very rapidly during the past five-year plan. The city is living on decentralized procurements and the supply workers travel throughout the country looking for surplus food products and industrial goods.... But looking at Sayanogorsk the general director for living conditions at Krastyazhmash, V. D. Shpet, can only say:

"They live without a care in the world, they have an ORS for 1200 people and they have an URS in the construction trust. We too would like to have our own little ORS, because we can place no hope in city trade."

Plus the aluminum plant has under its roof 1,386 hogs, 210 horses, and 105 bee colonies. Krastyazhmash would like to take over a couple of unpromising villages, but they are allotted burnt taiga in which it would be necessary to invest tens of millions of rubles without any clear idea of what would be gained....

There are quite a few cities and enterprises like this in the country. Apparently the construction of Tolyatti and Brezhnev are an unattainable model. More comparable with our cities are those that appeared in the BAM zone. But practically the entire country helped in their construction. But these cities are being constructed by a kray in which there are clearly more construction sites than there are possibilities of completing them successfully.

They are actually neglected cities which gives one the indelible impression that they are poorly organized, poorly cared for, and that they have no confidence in the future.

The directors of Krastyazhmash, having replaced the irresolute and spineless assistant general director and chief of the housing and municipal administration with more resolute and enterprising ones, apparently wants to make a change in the destiny of its little city. But it is quite clear that without the unwavering attention of kray and branch administrative agencies to these cities, without the allotment of additional capital investments and the corresponding construction resources, the development of Sayanogorsk and Solnechnyy in the foreseeable future will hardly differ from what is taking place today or what has taken place in the past five-year plans. The more so since the plant collectives are growing numerically and new shops will be introduced.

Observing life in the future city of Solnechnyy, with its 120,000 residents (according to the general plan for the first section) and the current city of Sayanogorsk with 65,000 residents, listening to their residents, and getting a sense of how difficult it all is for them, we recalled Tikhonov's lines: "If nails were made of these people, there would be no stronger nails in the world." And the best thing, at least in Krasnoyarsk Kray, where there are many construction projects and they are receiving no more construction or human resources, will be not to plan for the construction of enterprises involving so many people. There is technology that does not involve people, shops and even entire enterprises that do not involve people. There are probably also ministries that would construct these enterprises in the kray much more willingly and quickly than the USSR Ministry of Non-ferrous Metallurgy and the USSR Ministry of Heavy Machine Building are doing it.

In the new cities in Krasnoyarsk Kray they are not putting up frame-and-panel buildings, barracks, and beams. But here too, even though they have large capital investments at their disposal, they have not managed to avoid "residual" allotment of resources for the social and cultural sphere. This is now being overcome. What can be done so that those who come to the new enterprises will receive not only a roof over their heads, but the entire slate of necessary social, cultural, and domestic facilities?

1. Each territory should be its own organism. In the stage of planning and the allotment of resources it is necessary to take into account the specific needs of this kray for new construction projects and where the construction of residential areas begins "from zero, and to determine realistically the need for housing, coordinating it in all stages with the number of workers. And taking into account the fact that the provision is lower here than the average for the RSFSR, priority financing should be organized. The enterprise itself can do a great deal in the

social sphere, especially now when the life of the collective will be more closely coordinated with the results of the operation of the enterprise. New construction projects have more limited possibilities in this respect although here too one can think, for example, about the construction of cooperative, individual housing for workers and giving them loans for various domestic purposes. Here one could take advantage of the experience of other socialist countries where the proportion of housing constructed with capital investments, along with state housing, is constantly increasing, having reached more than 80 percent in Hungary, Poland, and Czechoslovakia, and 50 percent in Bulgaria and the GDR. And the population can construct individual and cooperative housing. How? State credit covers 50-70 percent of the estimated cost of the apartment, and as a result of subsidies from the enterprise the initial deposit decreases to 10-30 percent. Plus there is a long repayment period (25-30 years).

2. Now even the funds for housing and social-cultural construction allotted by the Gosplan and the ministries are being poorly assimilated and are being cut off. Before beginning construction of new enterprises we should create bases of the construction industry which could then be used for other purposes. Before the beginning of construction of the industrial zone we should concentrate funds on housing and social and domestic facilities. Construction trusts specializing in housing should be created. And in Siberia why not construct cottages like those in Estonia, especially in the new cities?

3. There should be benefits for young families whose capabilities are limited.

4. The administration now concludes collective agreements with the workers. But if it were to conclude individual (one might say "contract") agreements which stipulate what a person can obtain and when, what he should do for the enterprise and when?

5. It is quite obvious that material incentive funds should be created and distributed much differently at new enterprises than at ones that were constructed long ago.

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### **Lives of Social Dropouts Examined**

18200005f Novosibirsk *EKONOMIKA I*

*ORGANIZATSIYA PROMYSHLENNOGO*

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[Article by M. I. Ledenev, candidate of economic sciences, chief of the sector for reproduction of labor resources, and S. A. Chernyshev, junior scientific associate, Institute of Economic Research of the Far Eastern Division of the USSR Academy of Sciences (Khabarovsk): "Was the 'Bich' a Cultured Person?..." ]

[Text] "So What Should We Do?"

The word "bich" (Footnote 1), as it were, finally means a person who is detained by the policy for vagrancy. This is an extreme form of the phenomenon, but it is also transitional. Also sometimes included in this category are people who do not work, whose participation and socially useful labor is irregular, drunkards, people who have gone to seed, and moral degenerates. Many people think this: "Previously there were no 'biches,' but now their numbers are increasing. There always have been and still are unfortunate, weak, and sick people—they must be helped. But 'biches' must be isolated from society and forced to work." Vagrancy is simply condemned by public opinion since if not all people then the majority are convinced that in our country there are no socioeconomic preconditions for such a phenomenon.

What was the reason for the burgeoning of this social evil? There are many reasons. Economic, psychological, social. They include the significantly greater interruptions in people's labor activity when they are transferring from one job to another and the more frequent firings because of violations of labor discipline (people fired under Article 33, Paragraph 4 of the Labor Code, as has been repeatedly noted in the press, do not go back to work for a hundred days or more). The consumption of alcoholic beverages has reached socially dangerous dimensions in recent years and even its recent reduction has not reduced the number of people afflicted by alcoholism.

Retaining young people to "work at home" after completing school or military service has become widespread. All these apparent causes have not yet been sufficiently elucidated in socioeconomic literature. But there are also deeper causes. One of the manifestations of the extensive path of the economy is the poorly controlled growth of the number of workplaces and, as a result, the artificial labor shortage. To this one must add the high payment for unskilled labor, which is far from always accompanied by education and development of the need for labor among a particular segment of the people. In turn, the shortage of work force in many areas of production and the lack of development of the material and spiritual needs of some of the workers have caused a reduction of the demands placed on the results of labor and discipline. The educational influence of labor and labor collectives has weakened and man has less of a desire to develop his own capabilities. It is important to keep in mind that the zone of a relatively high level of consumption now includes a considerable proportion of people whose needs developed previously, with a low level of consumption. Their real needs turned out to be satisfied and frequently were below the possibilities of consumption that had been reached. This was brought about partially not only by the reduction of the labor activity, but also by the redistribution of the family budgets, and not in favor of the more active working members of the family. The shortcomings in social distribution that were linked to the imperfection of wages, price setting and the utilization of public consumption funds were exacerbated by the aforementioned

family relations. The need for qualitatively new conditions for hiring were not promptly and adequately taken into account by the system for social management. In its totality all of this exerted a negative influence on the labor activity and discipline of a particular segment of the population and stimulated deviations from social behavioral norms. One of these deviations was the segment of "biches."

When studying modern-day vagrancy we should not forget about the attempts at similar research undertaken in the past by such outstanding humanists as L. N. Tolstoy, A. P. Chekhov and A. M. Gorkiy. After meeting residents of flophouses L. N. Tolstoy was horrified at their poverty and degradation. And he had a natural desire to help these people personally and with the help of wealthy Muscovites. But soon he was convinced of his powerlessness. And not only because the rich people were in no hurry to offer their money to help the poor. "The majority of the unfortunates I saw were unfortunate only because they had lost the ability, the will, and the skill to earn their own bread, that is, their misfortune was that they were the same as I." (Footnote 2) It is impossible to convince a woman of loose behavior that her position is worse than the position, say, of a cook. On the contrary, she considers the position of a working man to be low and worthy of contempt. And L. N. Tolstoy's words sound like a reproach to that social structure in which he lived and suffered: "It is very easy to take a baby away from a prostitute or a beggar. If you have the money it is very easy to wash it, comb its hair, and put a clean dress on it, feed it and even teach it various knowledge, but for us who do not earn our own bread but do the opposite, it is not only difficult but even impossible to teach it to earn its own bread, because we through our example and even through those material improvements of its life which cost us nothing, teach it the opposite. It is possible to take a puppy and take good care of it...and take joy in it; but it is not enough to care for a person, feed him, and teach him Greek: it is necessary to teach a person to live, that is, to take less from others and give more; but we cannot but teach him to do the opposite if we take him into our home or into an orphanage that has been established for that." (Footnote 3)

K. D. Ushinskiy came to essentially the same conclusions in his outstanding article entitled "Labor in Its Psychological and Educational Significance." (Footnote 4)

In conducting research on vagrancy, idleness and other negative social phenomena under modern conditions we came to the conclusion: the reason for such degradation of the personality today, as 100 years ago, is that people have not received a labor education or, in the words of Tolstoy, "they have lost the ability, the desire and the skill to earn their own bread"—at least on a regular basis. The social sources of the phenomenon are different

today from what they were in the past, but the consequences are the same because the role of labor in human development has not changed.

There is hardly any need to prove that parents are not indifferent to how their children are educated. But are many of them concerned that their children will develop a stable habit of working? They are convinced that this task is not a primary one and that labor education is more the responsibility of the society than of the family. And this society will accept labor of any quantity and quality. And life from early childhood without socially useful labor or, which is the same thing, half-hearted work, without a feeling of personal responsibility for the outcome leads certain people to moral and physical degradation.

How does one explain all this to people who demand that "biches" be isolated who are not making rigid demands. And they asked Tolstoy's question: "So what should we do?" It seems that the latest party documents have given certain answers to these questions. It was emphasized that moral improvement of all social relations, including the prevention of desocialization, the "dropping out" of certain people from society, is impossible without clear and consistent implementation of the principle of distribution according to labor. And this means distribution of all the goods and not just the visible, "earned" part.

### Who Are They?

Five years ago we conducted research in the Far East where the "bich" phenomenon had become especially widespread. We investigated more than 500 people who, by virtue of their way of life, could be called "biches." We questioned 300 of the people who had been arrested for vagrancy directly in the holding tank. We questioned more than 200 people on the street and while they were doing seasonal work. The incorporated observation method was also used in the research. In this group were many people who had been in the special receiving facility two or three times already, but many were still only "candidates" for it. Among those employed in seasonal work were only a few people with normal labor biographies, and they did not exert a positive influence on the general atmosphere.

Not all of these people whose way of life has assumed the form of idleness and vagrancy are like one another. But still it is possible to single out among them two characteristic groups. One group includes people who are openly contemptuous of labor activity. "If you want to live you must be able to hang out." "there is enough work for our age, and we will do a lot of work later"—these are the expressions that indicate the difference. Their behavior is purposive, deliberate and consistent. Their way of life is generally speculative and parasitic, they live mainly at the expense of their relatives or the people who need them for some reason. Cunning and egoism are their main defenses. They are mainly young

people. Their external appearance does not attract attention, their passes are all in order, they usually end up in holding tanks, although they are essentially more socially dangerous. The accounting for these people is poorly arranged and it would not be simple to organize it.

The other category includes people who have gone to seed, who are either unwilling or unable to work regularly, having lost their professional skills. The majority of these people are separated from their families, many of them do not have passes, frequently they had been previously fired for violations of labor discipline, and they have been brought to account by legal protection agencies. This is obvious moral degradation. Their main "occupations" are drunkenness and inaction. Their general condition, behavior, and value orientation, in our view, provide no hope that they themselves will be able to organize their life. These people are beyond any kind of educational influence. They have no desire to "enter" production collectives with a clear-cut labor rhythm and discipline, and it would not be simple for them to do this. What they find attractive are one-time jobs, "private work brigades," gathering glass containers and wild plants (wild berries, mushrooms, medicinal plants), and panhandling. These are the majority of people found in holding tanks.

Among the 300 people questioned in the special receiving area relatively few were young or old. The majority were 30-39 years of age (both among men and women).

About 40 percent of the people questioned in the special receiving facility were born in the Far East. An exceptionally high proportion were legal violators: 200 of the 300 people had been previously convicted. A study of this category of people confirms the conclusion drawn previously: among the population migrating to the Far East a considerable proportion are people with deviations from social behavioral norms. Of these 200 people, 105 arrived in the region with a conviction, 35 were convicted after their arrival, and only 60 of those convicted were of local origin.

The majority of these people had lost their family ties. Of the 300 who were investigated only 29 were married, 138 were divorced (115 had children), 17 are cohabitating, and 98 have not entered into marriage and are in no hurry to take care of a family. Before their arrest they provided their means of existence in the following way: 92 people did various kinds of temporary, irregular work, 16 were supported by the person with whom they lived, 12 gathered and sold wild plants, and 122 gathered glass containers. Only 58 people were employed more or less regularly. At the time of their arrest none of the 300 had jobs. As a rule they explain this by the fact that they could not find suitable work. Others say frankly that they are not in a condition to enter into the labor rhythm of their brigades, sections and shops. "I do not have the strength to go to work," "I can no longer work as I did

before," "There would hardly be anybody who would need me now"—these are their answers. And this is frequently said with a great deal of bitterness.

#### Distribution of People According to Age and Sex, 1986

Age	Total	Including	
		Men	Women
18-24	23	16	7
25-29	32	27	5
30-39	118	98	20
40-49	77	68	9
50-55	33	30	3
56-59	10	10	—
60 and over	7	7	—
Total	300	256	44

On the basis of their attitudes toward labor, we can single out three typical groups.

1. People who intend to work actively at one-time jobs that enable them to earn a lot of money quickly. They are prepared to use any means to do this and agree to almost anything in order to obtain the sums of money they need.
2. People who have already evaluated the "positive" and negative aspects of their activity. They are at the crossroads. But the burden of habit and their passion for drunkenness (and they apparently recognize this in the depth of their soul) will hardly enable them to break out of the situation in which they have placed themselves.
3. People who are indifferent to their fate. They are simply not in a condition to perform any more or less serious work. They have a pathetic and guilty appearance.

They see their future labor activity as follows: 44 intend to work in a specialty, 42—in seasonal and temporary jobs, and 193 have not asked themselves this question. It makes no difference to them where they have to work.

The word "bich" most frequently jokingly but sometimes also seriously is translated as "former cultured person." In reality, of course, this is not the case. About 80 percent of those investigated had an education up to the 8th grade and approximately 40 percent had received specialized vocational training. Rarely one encounters people with a higher education. But hardly any of them had ever been a member of the intelligentsia in the full sense of the word, a person who had engaged in complicated mental labor, the development and dissemination of culture, a person with an orientation toward active positive work for the sake of the society. At one time a bich was a sailor who had signed off on shore, whose lot



in life was vagrancy. This word also reflects precisely the present situation of people who have "fallen" first from the labor collectives and then from the family and social life.

But why has this taken place? Let us look for explanations in a couple of biographies.

There is a student who is not without ability. School was easy for him. The family was materially secure. The parents were respected people. After school he became an instructor at the institute. Now the work demanded more exertion and it was also necessary to prepare for graduate school and work in science. There were no apparent successes. The parents went on pension and material assistance from them was curtailed. There arose problems that are common for an adult, but this person was not prepared for them. Conflicts began. Drunkenness. He was fired from his job. He became an instructor at an educational institution with a lower rank. But here too there was the same daily work that required a great exertion of effort. He lasted a year. He found easier work—as a laboratory assistant. He had a family and then a child. His overall position was lower than what he had expected, which he apparently thought would develop of its own accord. Irritation. Drunkenness. Again he was released "at his own request." After that.... It was like all the rest of the respondents.

He completed a medical institute. A ship's doctor. In his opinion there was no work on the ship since they were all healthy people. The double salary he got he began to leave in restaurants and to surprise his comrades with his "magnanimity." Later he got a job on shore but he was not strong enough to stop drinking. His colleagues at work began to express a lack of confidence in his competence. He began to go to job after job. His wife left him. He began to gather glass containers, to steal food scraps in dining rooms, and so forth.

A machine operator worked for 10 years on a sovkhos. He quarreled with his wife. He left for the city. Temporary work, "private work brigades." He lived with "friends." Drunkenness. A year passed. He got a job in seasonal work. We talked. "I am not a loafer," he said, showing his large red working hands which had not yet lost the spots that are typical of machine operators' hands produced by metal, sunburn, and dirt.

"Why are you going out for seasonal work again?" we asked him. "You could get a job today as a tractor driver doing transportation work at any plant. Any suburb in sovkhos would take you. In either case they would give you a place in a dormitory."

"No. I must earn extra money."

"And then what?"

"I shall try to find work here, in the city."

The fact that every third one of our respondents oriented himself toward various kinds of temporary work led us to the following idea: was not this work and the life that accompanies this environment that "leads" a person who has separated from the labor collective and, moreover, from his family, to the condition of a "bich"?

### From Temporary Work Brigades—To "Biches"?

We investigated 115 seasonal workers from the Khabarovsk Timber Construction Enterprise. They were employed felling trees and various kinds of auxiliary work. Practically all of them had specialties and many of them had several. Among them were 27 machine operators, 14 fitters, 11 carpenters, six welders; 93 of the 115 had worked previously in construction organizations. This labor potential would have been enough to create an entire construction subdivision which, unfortunately, will not be created now.

The selection of the place of temporary work is random for the majority, the circumstances just worked out that way. The majority (111) had worked previously at enterprises of this same kray or region. Two-thirds of them, even after completing the seasonal work, intended to stay in the region. It is typical that the majority had previously been fired repeatedly from other enterprises: 85 percent—three and more times, and every third—more than 10 times. Every fourth one had been previously convicted. These figures were obtained from the words of those questioned and one must assume that they look better than they really are. Obviously this kind of concentration of people with increased labor mobility and with convictions even in seasonal work is inadmissible. But in the Far East this situation is typical.

In order to study the attitudes toward labor and the personal orientation toward labor and life of the category of people under analysis an inclusive observation was conducted. In the field of observation were 47 people employed for the summer fishing season on the lower reaches of the Amur. Local residents and people who had come from regions of the Far East comprised only one-fourth and the remainder came from other areas of the country, and half of them took advantage of organized recruitment for this. The majority of the members of the brigade that was observed had been previously convicted or had extended interruptions in their work. By the age of 35 they had been employed in 8-10 productions. But circumstances force them to work. Their education did not exceed the 8th grade. More than 70 percent of those questioned left the school because of poor progress or regular violations of discipline. They had no desire to continue their education or increase their qualifications. One of the main goals of these people was to earn as much as possible. To acquire money. Through any means, not excluding illegal ones. They prefer highly paid work and the kind which would make it possible to have frequent and lengthy interruptions.

Work during the fishing season was monotonous and difficult, it required a great exertion of effort, and the day lasted 12-16 hours. The frequency of various scandalous situations that were registered during the time of performance of labor operations (beginning with petty disputes and mutual insults, and ending with severe conflicts right down to fisticuffs) reached eight or nine cases a day in the brigade. These people are well aware that the demand for the quality of their labor is insignificant. It frequently happens that there is nobody responsible for them because there is no collective as such. The brigade is divided up into small informal groupings. The main skeleton, the nucleus of the brigade, is made up of people who have not participated in the labor process for a long time or were previously fired for violation of discipline or were convicted. Only an insignificant number of people with normal work biographies enter such brigades. But, as we have seen, they are simply not capable of having a positive influence on the work and the attitudes that develop.

It is impossible to expect good work from such groups. And, indeed, the work they perform frequently has to be done over again by others. The products produced by seasonal workers are accepted with large complaints.

But in spite of this, the relatively easy and advantageous operations have most frequently fallen into the hands of seasonal workers. Because in the majority of cases they have dictated their own conditions to production leaders. Because of the extremely crucial shortage of personnel, managers have been forced to agree with this kind of dictatorship in order to solve crucial economic problems somehow. It is unusually difficult to manage these people. At any moment they can walk off the job, create a situation of sharp conflict, and use it for their own self-centered purposes. A real iron hand is needed in order to force them to work with the proper energy. Tardiness, absences, and arbitrary departure from the work place, drinking alcoholic beverages—these are customary and mass phenomena. On the whole bad habits are so characteristic of the seasonal workers we studied that they are perceived by other people as something customary and completely permissible. As a rule, these people are not burdened by family ties: more than 70 percent of them do not have families or are separated. The children of those who do have families stay with relatives or in boarding schools while the parents are working.

One must also note the following typical features of the contingent of people we studied. They can listen half-heartedly to remarks and advice and even agree, but they will continue to do things their own way. And frequently without any evil intention, out of habit. They have practically no sense of duty or responsibility, which either were not instilled earlier or have been lost. Their desire to earn as much money as possible is usually not linked to any specific purposes. Only 20 percent of them were going to use the money they accumulated for purposes of moving to other regions, acquiring housing,

educating children, and so forth. But this is basically typical of seasonal workers who are local residents, people who have recently returned from the army, and so forth. The rest of those questioned have no particular plan. The lack of prospects or any further clear-cut reference points shows their complete indifference to their own fate.

The group that call themselves "biches with tenure" stand out especially among the seasonal workers. The desire to earn good money has always attracted them to seasonal work. Magnificently informed in literally all spheres of the national economy where seasonal labor is used and there are various kinds of one-time jobs, they can find work easily, they know all the procedures and conditions pertaining to the kind of work that interests them, and they utilize them very skillfully for their own purposes.

Life that proceeds in amusement and binges, which is not controlled by their will, without concern for self-development or self-improvement, in the final analysis, as they themselves note, disenchant them and leaves their future life without promise and without meaning. The money they earn will not last them long and then, after regular drinking bouts, they are forced again to look for one-time work or lead a parasitic life. The majority of them usually have neither family nor occupational skills as such. In the future they intend to engage only in seasonal work and have become accustomed to this. The accounting for these workers is also extremely poorly arranged. And yet this category of people, in our opinion, in the near future will augment the basic contingent of people in special holding tanks. The majority no longer have work skills and have lost their ability to work, they are degraded morally and physically, and they will hardly be suitable for anything except for collecting used glass containers. They will become the "completed biches."

### How To Return Them to Society

And so we have become convinced that the reasons for the vagrant way of life are multifaceted and are basically of a personal, individual nature. Is it possible to return them to society? For these people daily, ordinary labor becomes a heavy burden and the monotony of everyday life creates an increased psychological load for them. It is possible to overcome this burden only by acquiring skills for a particular kind of labor, developing a sense of responsibility and duty, and then the positive emotions from the results of the labor and so forth will also appear. But this, of course, is a complicated process. Far from every "bich" can return to a normal way of life.

The process of the "return" is complicated also by the fact that "biches," who have not acquired labor tempering or who have lost it, who have monstrously marked up labor books and "complicated" biographies, take on the most unattractive, frequently heavy and dirty work. Concentrated in these production areas is precisely this, to put it mildly, difficult contingent. The corresponding

moral and psychological situation develops. It is clear that under these conditions new "dropouts" from the labor collectives are inevitable.

We investigated a plant at which difficult working conditions had developed. This influenced the personnel makeup and the overall atmosphere in the collective. The workers of this plant stated directly that their collective is formed by personnel who have been fired in other productions. And, indeed, many of the people working here had previously been fired for violation of discipline or other acts. But...twice as many workers were fired from this plant for the same reasons. Thus this enterprise was turned into a breeding ground for asocial phenomena. There can only be one conclusion: we must spare neither forces nor funds to improve working conditions in all production sections. After all, we literally pay for the "savings" in working conditions by losing people.

But, unfortunately, it is not possible to eliminate these work sections quickly everywhere. But what should be done in the meantime? We must not allow an excessive accumulation of people who have already proved themselves to be labor or legal violators. Apparently here too there is a limit at which quantity rapidly grows into a new quality. We have compared the foundry shops at two plants. The conditions were approximately the same. But in one "foundry" there was a contingent of workers who could be managed only by a few people. And this was the "sorest" spot at the plant. The other "foundry" was an ordinary shop: not a single person had been fired under Article 33, Paragraph 4, and there was not a single convict. Therefore it is necessary to take a critical look at tendencies that are clearly expressed today: to send these unstable people to the production areas that are most difficult and have the poorest supply of personnel. And this is unthinkable, to put it mildly. Construction—a branch on which the entire future and present depends—has ended up in this situation in many rayons of our region. And it is difficult to say whether more good or harm is produced by this practice that is becoming ingrained—to send here people with deviations from social behavioral norms. Is this not the reason for the loss of that "entire mechanized construction subdivision" which we mentioned above and which disappears into thin air after the felling of the trees, and a good half of these "voluntary lumberjacks," apparently, end up in special holding tanks?

And what about the youth who was spoiled by his parents and the undemanding environment? After all, the labor of a teacher will not become easier for him. It will hardly be possible to expect a rapid increase in wages in laboratory and other positions. Very frequently today boys and girls consume much more than they can earn independently (at least during the first years of their work). Situations of conflict can arise which can lead to the individual "dropping out" of society, and this can already be programmed. Mass research in a Far Eastern city showed that the disparity between the expected and

the actual earnings among young people reaches 100 rubles and more. And there are frequent discharges because of this. It is clear that this social problem cannot be solved only through the forces of mentors and brigades and that it is inadmissibly simplified in propaganda work.

But a more general prerequisite or, rather, condition that provides the very possibility of vagrancy is, in our opinion, the existence of seasonal or one-time temporary work. These productions have existed in the past as well, selecting and developing a type of worker with far from the best personal and social characteristics. Even F. Engels noted that day labor generated common people. The scale of this kind of production is now decreasing. But the social problem associated with it is being aggravated. Why?

The orientation toward practically complete enlistment of the able-bodied population in the constantly expanding public economy has created qualitatively new conditions for the provision of labor for production. The shortage of personnel has become chronic for many areas, especially those that are lagging behind in terms of working conditions. And seasonal productions experience the shortage of personnel most keenly. While 2 decades ago for individual people they were necessary and frequently the only sphere where the application of their labor in the public economy, now many of these sections are completely "uncovered." Not coinciding in their time phases, seasonal and one-time temporary, individual jobs have opened up practically a permanent possibility of job placement for all who desire it. In other words, it is now possible to engage permanently in one-time temporary jobs. Having ended up in such a difficult position, these productions are forced to accept people without any selection, provide them with relatively high earnings, and put up with the poor quality of labor and unsatisfactory discipline. People who have dropped out of permanent labor collectives, precisely for these reasons, find here an environment that is especially acceptable, they concentrate in groups, and they form their corresponding leaders and their corresponding group psychology. And these people, for whom public educational influence is vitally necessary, end up outside of it.

This problem will not disappear "of its own accord." Much will depend on how planned and organized the provision of the necessary labor force for the aforementioned productions will be. Otherwise they will remain catalysts for asocial phenomena.

But the situation here is certainly not hopeless. The work of student detachments during the fishing season and in other such areas, it seems, would forestall the appearance of many hundreds of "biches" here. Probably other solutions are also possible.

And there is no justification for the fact that the selling of glass containers, because of the poor organization, has become degrading work for people. Therefore a large part of it is discarded. It is picked up by "biches." Here is what they say: "Turning in bottles is the goose that laid the golden egg. We sell them for half price. They will not buy them from anyone else, they say: they have no containers—but we have them at any time. In the receiving points they know us by face and by name." Without even mentioning the economic expenses borne by the population because of this kind of disorganization, this degrades hundreds of people. "Searches" for suitable work among "specialists in turning in glass containers" take up an average of 9 months a year. Such is the price of an empty bottle....

In the Far Eastern region all of the aforementioned preconditions that stimulate a vagrant and a social way of life are manifested on an especially large scale and in great contrast. The chronic shortage of work force with the arrears in socioeconomic development of the region conditioned the attraction here of population with relatively low cultural and qualificational characteristics. Such people come to us of their own accord or they are sent through organizational recruitment.... And Khabarovskiy Kray has become a kind of crossroads of the region and on the majority of its territory there are no entry restrictions. So the concentration of people with deviations from social behavioral norms here, obviously, is even higher than in the rest of the Far Eastern region.

#### Footnotes

1. "Bich"—a widespread interpretation: formerly cultured [intelligentnyy] person (Ed.).
2. Tolstoy, L. N., "So What Is To Be Done?" in the book "Ne mogu molchat" [I Cannot Be Silent], Moscow, "Sovetskaya Rossiya", 1985, p 138.
3. Ibid., p 129.
4. Ushinskiy, K. D., "Sobr. Soch." [Collected Works], Vol 9, Moscow, Izd-vo Akademii Pedagogicheskikh Nauk, 1950, p 565-578.

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#### Past Lessons of Industrial Reconstruction Reviewed

18200005g Novosibirsk *EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO)* in Russian No 8, Aug 87 pp 98-124

[Continuation of article begun in EKO No 7, 1987 by I. A. Grekhov, candidate of economic sciences, Honored Metallurgist of the RSFSR (Kamensk-Uralskiy, Sverdlovsk Oblast): "Lessons of the Past and the Present"]

[Text] One recalls that as early as the 9th Five-Year Plan pipeworkers of Sverdlovsk Oblast were among the initiators of the all-union movement for reconstruction of

enterprises. As a result of reconstruction production volumes increased, product quality improved, working conditions were facilitated, capacities were created for producing new kinds of products, and labor productivity increased. For example, at the Sinarskiy Pipe Plant the pipe casting shop was reconstructed during those years. Instead of the outdated carousel method of producing pipes they introduced the modern centrifugal semicontinuous method. For its invention and introduction a large group of specialists, including plant workers, were awarded bonuses of the USSR Council of Ministers and a patent for invention was sold to Japan. The new production method significantly facilitated working conditions and eliminated occupational diseases that were inherent in casting production. With overall expenditures on reconstruction of 4.5 million rubles, the increase in production volume was 80,000 tons; the number of workers decreased by 560. In order to create equivalent capacities through new construction it would have been necessary to spend 29.65 million rubles. At that time examples like these were widespread.

But gradually these funds allotted for reconstruction decreased. The work for permanent and planned reconstruction died out. The Pervouralsk Novotrubnyy—the flagship of the pipe industry—under the 11th Five-Year Plan assimilated one-sixth the amount of money for reconstruction that it did under the preceding, 10th Five-Year Plan. The rates of renewal of production lagged behind the demands of scientific and technical progress.

Perhaps the economic managers did not raise the issues of allotment of funds for reconstruction sharply enough to the ministry? Or the managers of the VPO's and ministry did not have an adequate idea of the expediency of this path of development of the branch? No. The chief of the Soyuztrubostal VPO, A. I. Fotov, a former worker of the Novotrubnyy Plant is probably abreast of things. But to all their appeals for the allotment of funds the managers of the enterprises received one answer: there is no money. Financing was halted for facilities on which reconstruction had already been started (Shop No 1 of the Novotrubnyy Plant). And this under conditions when at other plants of the VPO part of the funds were not being assimilated from year to year.

The shortage of funds allotted by the ministry was discussed on the pages of PRAVDA by the director of the Chelyabinsk Pipe Rolling Plant, N. P. Karpenko, and these questions were raised by the chief of Shop No 1 of the Novotrubnyy Plant, Hero of Socialist Labor A. I. Yachmenev, but the statements did not evoke the proper reaction.

The reason here is simple. When a new section or ship for the production of pipes is being constructed, the responsibility for failure to meet the deadlines lies mainly with the builders. The USSR Ministry of Ferrous Metallurgy explains the failure to deliver pipes by their poor work. But as the production capacity is being

introduced under the banner of reconstruction and is being conducted by portions of the plant, the responsibility of the final result must be taken by the managers of the VPO and the ministry. Not every manager can make such a decision.

The quality of the equipment that is received is of the greatest significance in technical reequipment of the branch. Far from always does it satisfy the demands of production. Design defects are revealed during the process of operation, the actual productivity does not correspond to the planned productivity, and product quality does not meet the existing standards. It is possible to put up with these shortcomings when assimilating an experimental bottle of a machine or a new technological process, for here, obviously, such difficulties are inevitable. But it is quite inadmissible when equipment is put into series production without proper testing and then supplied to new facilities. The machine tools for cutting the threads on the pipes of the petroleum assortment and the couplings of the Tbilisi and Kramatorsk plants, could not provide the necessary precision either. In order to meet the client's requirements we were forced to install imported machine tools. And so much time and money was spent in order to demonstrate and then rectify the mistake that had been made!

At the end of the 1950's the Elektrostalskiy Heavy Machine Building Plant produced a successful model of a domestic KhPT [cold pipe rolling] mill. The group of its creators was quite deservedly awarded the State Prize: at that time the mills were the best in Europe. A considerable amount of time, 25 years, passed, but the Elektrostalskiy Heavy Machine Building Plant continues to produce the same kind of mills. Only the model number is changed (from 1 to 3), but the country has received no significant increase in labor productivity. How does one explain that? The plant specializes in the production of unique heavy metallurgical equipment, and the KhPT mill is a side product for it, and, moreover, it is disadvantageous (the high precision, the large expenditures of machine tool hours per ton of output, the small metal-intensiveness as compared to hot rolling mills, and so forth). This is the only plant in the Soviet Union that produces such mills, it has a monopoly in the branch, and for a quarter of a century it has continued to produce equipment from old blueprints, models, and technology. A completely different approach to solving this problem is taken at the Kriogenmash NPO (Balashikha). This has been discussed in detail in EKO (No 4, 1986). And yet both enterprises are located in Moscow Oblast and there is no need to go very far for experience....

Another reason why the situation is not changing is that when planning new shops the planning organization in the system of the USSR Ministry of Ferrous Metallurgy (GIPROMEZ) according to existing provisions must coordinate the productivity of the basic equipment with the supplier plant and not set it in keeping with the

achievements of world technology. Yet there are technical solutions for sharply increasing the productivity of KhPT mills. The institute, under the leadership of Academician A. I. Tselikov, has developed a design for a mill which simultaneously rolls two pipes instead of one. To be sure, it is not universal. In foreign practice they have approximately double the speed of rolling. An original solution was found for reducing the dynamic loads that arise during the process of rolling.

One must say that friction arises very frequently between the enterprise and the supplier of equipment. I wish to single out three stages in our interrelations. When considering the technical plans of the planner they usually promise to take all remarks into account. When drawing up the working plans it is fairly difficult to reveal mistakes, and the qualifications of the plant workers are not adequate to teach the designers how to do their work. Frequently they promise to correct at the time of assimilation of the planned capacity those defects that appear during final testing. But after the document is signed by the state commission it is fairly difficult to get the suppliers to eliminate the defects in the equipment.

The plant director is interested in accelerating the acceptance of the object for operation since he has the state plan and, moreover, it is only one month from the time the document is signed until it is approved by the board of the ministry and during this time it is practically impossible to reveal all the shortcomings and inconsistencies of the new equipment. It turns out that the enterprise purchases a "cat in a bag": until the cat is taken out you do not know what color it is. When assimilating the planned capacity one begins to see that the equipment does not fully correspond to the technical specifications, that more work is needed, that the actual assortment of products does not correspond to the planned assortment or that the necessary semimanufactured pieces have not been provided and, consequently, the planned economic indicators do not correspond to the actual ones. It takes a good deal of time and money before all this is smoothed out. Apparently it is unrealistic to set the task of eliminating all mistakes during planning, but it is quite inadmissible to repeat previous ones, the more so on a large scale. At one of the plant's party-reelection conferences at the Sinarskiy Pipe Plant the speaker sharply criticized the management of Wire-Drawing Shop No 1 for slow rates of assimilation of planned capacities after reconstruction. In general the criticism was justified. But who will criticize Uralgiprom, which for a second time planned mechanization of a finishing flow line in this shop which was previously rejected at the Pervouralsk Novotrubnyy Plant?!

In order to conduct reconstruction and technical reequipment in short periods of time under the conditions of operational production, construction-installation work becomes especially important. It is fairly difficult to hire builders for this purpose. It is more expedient to have at the plant a construction organization which could do small volumes of work, as was envisioned in the

form of the direct labor method. It figured in the plan of work for capital construction and made it possible, in addition to facilities for industrial purposes, to work on the construction of housing and social, cultural and domestic facilities. At the Sinarskiy Pipe Plant, for example, each year one 18-apartment building was constructed by the direct labor method. For incomprehensible reasons, under the 11th Five-Year Plan the ministry significantly reduced allocations for the direct labor method which, naturally, led to a reduction of the staffs. But today, when the capacities of construction organizations are clearly inadequate and technical reequipment must be conducted in short periods of time, it is necessary to restore this work method, above all for the reconstruction and construction of housing.

The stable operation of the enterprise is directly dependent on the quality of planning. There is nothing new or unknown in this point. EKO has written about it repeatedly. Especially close to me is the statement by Zh. S. Kryuchkov on the subject (see EKO No 5, 1984). Difficult but realistic production plans mobilize internal reserves. Mistakes in planning bring about a need to revise previously approved plans, which undermines the authority of the state plan and introduces disorganization into the production process. In my opinion, managers, at least at large enterprises, should be enlisted in the planning process. This is what was done up until the 10th Five-Year Plan. The production plans were considered in the Main Administration and divisions of the USSR Gosplan with the participation of managers of enterprises, who had the opportunity to express their opinion and received explanations regarding the issues that were touched upon as well as assistance. The opinion of the plant director far from always prevailed, but I do not recall a case in which the production plan was unrealistic or, in any case, to the extent that the plant director could prove it. After this discussions of the plan were curtailed and all the forces of the enterprise were directed toward its fulfillment.

After the creation of the VPO the enterprise was severed from the planning process. Of course we submit our remarks but, as a rule, they are not given the proper attention by the planning division of the VPO. As a result, the plans are delivered to the enterprises very late (order No 1 for the VPO—at the end of the first quarter, but in 1985 the order was received on 20 March (and they are of poor quality). The plans for new technical equipment are not coordinated with the plans for production, the production plans—with the orders that have been submitted, and so forth. There are significant divergences between the plan in physical terms and the financial side, as a result of which the so-called products on paper only appear. If before the creation of computer centers at enterprises this indicator was disputed only because of the erudition of the managers, when either the strong or the clever won out, the computer gave the enterprise the opportunity of presenting proof of incorrect planning, which it was practically impossible to refute. But it is not being utilized.

The enterprise receives an unrealistic plan for gross output, sales, profit, and labor productivity. These indicators, in turn, lie at the basis of the calculation of material incentive funds for the collective, the question naturally arises: what will happen next with this situation? What hopeless prospects are not yet apparent. Even recognizing the fairness of the demands made by the enterprise, the ministry continues to hope to use emotional methods to reach the truth, and the clearest answer to all the questions is: "They have planned for us in such a way that we have received an unrealistic plan, which is not distributed equally among the enterprises." Having received this kind of information from the VPO, the enterprise does not "break its neck," but directs its energy toward revising the information. Moreover, the management of the VPO frequently does not orient the management of the enterprise toward fulfilling the plan for the first quarter in order to more easily solve the problem of revising the plan in the USSR Ministry of Ferrous Metallurgy. Apparently they have no other ways or means of solving this problem.

What is the position of the plant director in this situation? He is forced to set an impossible plan for the basic shops of the plant. This situation does not contribute to strengthening production discipline, but rather causes it to disintegrate. Moreover, neither conscience nor the party organization will allow one to begin a new production year with a failure to fulfill the state plan. The discussion is brief there: "If you have received an unrealistic plan—go to Moscow and take care of it." The statement of the problem is just. In the final analysis the plant director is forced to achieve an irregular breakdown of the plan throughout the year. All of the products on paper are shifted first to the fourth quarter and then to December. At the end of the year the problem of fulfilling the annual plan is solved. It is adjusted using reserves of the ministry and VPO, and partially through overfulfillment of the plan throughout the enterprise for the first 11 months.

What does this lead to? The authority of the state plan is undermined and it becomes possible to cover up internal shortcomings at the enterprise with objective factors. Enterprises that are operating well are placed in equal conditions with those that are operating poorly: both of them hope for a revision of the plan, one because of its poor work, the other because of incorrect planning. I shall give one example. At the Sinarskiy Pipe Plant they introduce new capacities for producing pump-compressor pipes for the petroleum industry. During the first year the chief of the VPO established a production plan in excess of the planned capacity. (Footnote 1) As a result of this the production plan was reduced at one of the plants of the VPO for the same pipes. The position of the VPO chief was understandable: to report for the failure to fulfill a plan in terms of products list during the period of assimilation of a new shop was simpler than at an operating enterprise, it was possible to blame objective factors, and there would be no guilty parties. But the plant collective did not adopt this solution since during

that period the objective plan is one of the decisive factors in successful assimilation of the planned capacity. For this reason I was forced to go to I. P. Kazanets, who was the minister at that time, but the consideration of the issue was entrusted to the management of the VPO. After that I had no desire to go to the ministry with complaints about the actions on the part of the VPO management. The plant retained its material incentive funds and this was not reflected in the system of material incentives. Several years passed, the chief of the VPO went on pension, and it was as though the whole case had been forgotten. But I had occasion to recall it repeatedly when summing up the results of the collective from the beginning of the five-year plan. It was necessary to state that while operating well the shop does not fulfill the five-year plan because of the voluntarism in planning. It was I who had to face the workers at this moment and not the VPO chief and not the managers of the ministry.... The labor collective can achieve a good deal through its own forces.

At the Sinarskiy Pipe Plant, for example, there was a practice of summing up the results of the shop chiefs in the office of the plant director. This was done once a quarter. They proceeded as follows. The shop chief reported on the results of the work for the past quarter. The chiefs of all the plant services who were in attendance at the conference expressed their wishes, suggestions, and remarks. From the results of the conference they drew up a protocol which determined the basic directions in the work of the given collective and plant services. Before the beginning of the next conference, they checked on the preceding protocol. Individual measures were checked at shorter intervals, but mandatorily when checking for the quarter they did an evaluation of executive discipline both of the management of the shop collective and of the managers of the services of the plant administration.

What is the advantage of all these conferences? In the first place, the shop chief does the reporting and the managers of the services of the plant administration and the plant director during preparation for the conference analyze the state of affairs during the report period and evaluate their actions. In the second place, during the discussions effective proposals are made. In the third place, strict control over the implementation provide for prompt and high-quality fulfillment of the earmarked measures not only by shop personnel, but also by services of plant management and the plant directors.

There were also negative aspects to these conferences. Not all of the participants prepared conscientiously for the conference. Sometimes the speaker gave a superficial report on the state of affairs in the collective, without drawing the proper conclusions or making suggestions, and certain managers of services of the plant administration formulated their statement with the phrase: "no remark or suggestions for improving the work." This kind of expression of their opinion causes a number of various presuppositions, right down to the idea that this

manager is not fit for his position. The plant director should also recognize that he is not doing enough work with such managers. An analysis of the conference makes it possible to draw a conclusion concerning the contribution to the overall cause made by each participant in the conference, and the results of the inspection of the fulfillment of measures makes it possible to judge whether or not the words of each manager, including the plant director, correspond to their deeds.

When working under the new conditions, when it is necessary to reveal not only the superficial reserves, but also the deeper ones, it is necessary to have new organizational forms in the process of management of production. It will be expedient to conduct similar reports of shop managers not in a "narrow circle," but at a meeting of the labor of the shop labor collective. If the report of the shop chief contains little criticism (while spoil relations) or self-criticism (why drag out dirty laundry), the labor collective will be able to augment the report in the proper way.

The plant director ends up in a somewhat unusual situation. As a rule, he reports on the work of the plant as a whole, but here the framework of the statement is narrower and it has to do with how the administration of the enterprise is helping the shop collective to solve production problems.

It would be expedient to extend this kind of practice of conducting conferences to the balance commission in which the plant director reports to the VPO on the results of the work of the enterprise according to the totals for the year. The idea that the balance commission should be held not in Moscow but at the enterprise was expressed by the management of the Soyuztrubstal VPO, but so far things have not proceeded beyond good wishes. At such meetings not only the plant director, but also the chief of the VPO would have to answer certain questions of the labor collective.

The USSR Ministry of Ferrous Metallurgy has made some good decisions: concerning improvement of the quality of planning, uniform breakdown of the plan throughout the year, revision of state plans, and so forth and so on. It was decided to create an automated control system (ASUzakaz). But this work is being done very slowly and more than one five-year plan will pass before the system will begin to operate in full volume. I think that it is necessary to more extensively enlist plant collectives in the discussion of new plans that ensue from the Law on Labor Collectives. As we know, the VPO does not always admit its mistakes. It would be expedient for disputed issues arising between the VPO and the enterprise to be considered in the ministry at the beginning of the planning period.

In the USSR Ministry of Ferrous Metallurgy pipe production of the petroleum assortment is under special supervision. Indeed, the products are of great national economic significance and are produced by many plants



of the ministry. As a rule, each year the deputy minister, N. A. Tulin, gathers the managers of the enterprises together at special conferences, and in 1985 the conference was conducted by the branch minister, S. V. Kolpakov. At the conferences they considered the situation with respect to the fulfillment of the plan for these products. The managers of the enterprises that are not fulfilling the production plan are criticized and those that are operating well...receive an additional assignment for above-plan production of pipes to make up for the arrears throughout the branch. This practice has been in existence for several years. How does one explain the fact that the same plants regularly fail to fulfill the production plan? Why not take more radical measures than to spread them throughout the ministry?

The enterprises that have received the additional assignment also have their difficulties. It is not simple to rearrange production during the 2 months left before the end of the year, and it is practically impossible to obtain funds for metal for producing above-plan pipes. The plant is forced to spend its carryover supply of blank pieces, thus complicating its own work in the next year.

Many opinions have been expressed and discussions have been conducted concerning planning methods. This question has repeatedly been considered on the pages of the magazine EKO as well (let us recall at least the article "The Everyday Life of the Director" by G. A. Kulagin). But the existing method of planning from the level achieved in all spheres of our activity have become so ingrained that so far no progress is in evidence. The arguments of its proponents are: it has been tested by many years of practice, it does not require an in-depth analysis during planning, and it reflects the state of affairs more or less objectively. On the other hand, it places the collective in a difficult position if the average annual indicators achieved as a result of favorable conditions are considerably higher than are planned and are included in the base for planning for the next period.

With the existing system of planning from the level achieved, each manager is faced with two problems: unconditional fulfillment of the plan for the current year and the creation of a base for the next year. Both problems are fairly significant, especially for indicators of an economic nature.

In principle it is possible to plan volume indicators from the level achieved in ferrous metallurgy since the percentage of the fulfillment of the plan in physical terms cannot fluctuate sharply, the ministry allots funds for metal for the production plan, and a change in the assortment is envisioned by the production plan. But if one considers questions of expenditure of material resources, on which the enterprise's economic indicators are directly dependent, the picture changes sharply for the metallurgical industry as well. Up to 80 percent of the production cost of our products goes for the expenditure of metal. Planned expenditure coefficients have

been established for metal for particular kinds of products. In keeping with these we draw up a planned calculation of the production cost of the products that are produced. Thus the majority of the enterprise's economic indicators are directly dependent upon the expenditure of metal and how the enterprise includes the planned expenditure coefficients. But it is also possible for savings on metal not to depend on the work of the enterprise (the quality of the blank pieces could improve, there could be a favorable assortment of orders, and so forth). The existing system of accounting for metal at plants with a large number of drawing shops, which because of the cyclical nature of production have a considerable amount of incomplete production, creates certain difficulties in accounting for expended metal. Even with an actual savings it is fairly difficult to determine precisely the sources of it. And a detailed inventory of the metal is conducted only once a year.

The VPO annually conducts a planned revision of the expenditure coefficients for metal. In places where there are savings they are established at the level that has been reached. Moreover, they also give a stricter assignment for production cost of the products, which also indirectly depends on the expenditure of metal. If the enterprise allows an overexpenditure as compared to the established norms, this involves not only a deterioration of the plan's economic indicators but also a failure to fulfill the plan in physical terms because of the shortage of funds for procurements, which are allotted under the plan depending on the expenditure coefficients. So the question arises: does the manager's hand shake or does it not when he is signing the report concerning savings on metal in excess of the established expenditure coefficients?

Proponents of planning from the level that has been reached frequently use the saying: one must begin at the beginning. I am not against having a "beginning," a "base" from which new planned indicators are subsequently calculated. But a thrifty manager would hardly move the beginning to a new place each year, that is, establish a "base" of the indicator for the new year from the level achieved in the preceding year.

The essence of my proposal is this: to establish base production indicators for the enterprise at the beginning of the five-year plan, even if they are planned from the level achieved. Subsequently there would be an annual increase in production-technical indicators in percentages of the base reached at the beginning of the five-year plan. If one takes into account that the annual increase in earnings amounts to about 1.5 percent, the increase in labor productivity should be up to 3 percent. Here one should give the labor collectives the right to decide how to reach these indicators. The increase in production volumes in physical indicators should be within these limits (an annual increase in the range of up to 3 percent is quite acceptable for existing production and, taking into account capital construction and reconstruction, they could also be higher in keeping with the assignments in the five-year plan).



I think that it would be more correct to plan the economic indicators by establishing more rigid indicators for the production cost of the product (within reasonable limits, of course). But the enterprise should have the right to decide independently which items of expenditures to use for this purpose. And the expenditure coefficients for metal and other materials which are obtained through calculation and confirmed by statistical materials should not be revised during the course of the five-year plan. As a result, the enterprise would obtain the possibility of creating the necessary carryover residual in order to provide for rhythmic operation and fulfillment of the orders of the consumers. Surplus funds for metal should be reduced with the agreement of the enterprise. The incentive for reducing the expenditure of materials and metal would be an annual increase in assignments for profit from the products that are produced that is constant for the entire five-year plan. Plans for new objects should be established for the plant only after they have been accepted by the state commission. I think that this will make it possible to effectively evaluate the work of each labor collective.

What situations can arise here? Let us assume that the assignment envisioned by the plan for the rates of increase and production volume for the five-year plan was fulfilled by the enterprise in 2 years, which is theoretically possible. It might turn out that the products are in demand and the output can be provided with the necessary materials or the products are in short supply and they do not have the necessary raw material for their manufacture. Then the enterprise makes a proposal to increase the production plan in excess of the established assignment. This increase in the production plan, in my view, should be regarded as a counterplan. It is necessary to allot materials for it, perhaps not according to planning coefficients, but according to actual ones if they are lower than those planned. And there should be additional material incentives for products produced through the savings on the material. Perhaps some of the profit from the sole products made of materials that have been saved could be deducted into the material incentive fund. This could also be used with the existing system of planning.

If the products are not provided with the materials or are not in great demand, the amount of the production plan can be left unchanged. The enterprise will be given the opportunity to devote more attention to other indicators: labor productivity, the quality of products that are produced, reduction of material expenditures, and so forth.

It would be incorrect to consider shortcomings in planning only at the level of the higher organizations. There are also large reserves and possibilities at the enterprises, especially in the sphere of economic indicators. For correct planning it is necessary to have objective and up-to-date information. Work in this area is still being conducted in the old way, without proper analysis, using intuition and statistical materials alone. Enterprises of

our VPO (including the Sinarskiy Pipeline) use computers to solve the most complicated problems in the area of production planning and sales of the final product. But we are lagging significantly behind in questions of planning economic indicators for the shops. In world practice, for example, at pipe plants of Italy, every package of pipes that comes from the prepared products warehouse has a label which indicates the actual production cost of this package of pipes. It is weighed during each technological operation. Thus the expenditure of metal is taken into account on each shift and in each work place.

And another eternal problem of interrelations between enterprises and foreign organizations which was described very well at one time in EKO in a discussion concerning the role and position of economic services at the enterprise. This is the landslide of paperwork that is falling on the enterprise.

At one time our ministry issued an instruction that prohibited asking the enterprises for materials and references not envisioned by state reporting. Now this policy is adhered to there, although not all the time. But party and trade union organizations, people's control agencies and local soviets of people's deputies in various inspections ask for a large quantity of references, substantiations and reports in arbitrary form. If one takes into account that there are quite a few of these inspections, the diversion of enterprise management workers for drawing up these materials is fairly great. The point of changing over to a system of accounting and control on computers is lost. Interesting facts are given by the first secretary of the Revdinskiy CPSU Gorkom in Sverdlovsk Oblast, P. A. Matveyenko: "The paperwork bureaucracy is still so great that the gorkom staff is often pointlessly taken away from work with people. The report forms are getting larger and their quantity is increasing. Thus on a form that was recently received concerning patronage assistance to sovkhoses, it is necessary to answer 140 questions. During last year we sent to the obkom almost 7,000 figures and in order to do this we collected more than 70,000 figures from the party organizations. Management workers are even more confined to their desks by the pressure of paperwork. This style must be eliminated. In order to gain victory over this evil it is necessary to reduce all reporting by a minimum of two-thirds."

Under the new five-year plan significant tasks have been set for industry in the area of radical improvement of product quality. If one compares the absolute figures for losses from defective work per 1,000 rubles of commodity output at enterprises of various ministries of Kamensk-Uralskiy, the result is not in favor of the Sinarskiy Pipe Plant, although the Soyuztrubostal VPO occupies far from last place with respect to quality indicators. Plants of the pipe industry are not on the highest level with respect to these issues, and the reference to the peculiarities of the production and imperfection of the system for accounting for defective work does not sound convincing.

In order to solve this problem the main issue is radical improvement of the quality of the initial raw and processed materials. We do have semimanufactured products. This is not a new problem. It has existed as long as there have been pipe plants that receive blank pieces from other plants of the USSR Ministry of Ferrous Metallurgy. The quality of blank pipes has been a serious impediment to stable operation of the enterprise and recently there have been more and more cases of down time of pipe rolling equipment because of the lack of them.

Solving all these problems is difficult and requires considerable time and money. But, in my opinion, the organizational aspect of the issue is also of no small importance, and it does not require material expenditures: it is necessary to change the attitude toward the initial raw material and make it possible for the consumers to make stricter demands on the suppliers, the more so since we are all in one branch. There was a time when pipe workers were given the proper understanding and support in the ministry. At that time our colleagues called up the "bluebloods" of ferrous metallurgy. How does one explain the fact that their attitude has changed recently? By the deterioration of the work of the branch? Or the managers of Glavtrubostal and subsequently the Soyuztrubostal VPO have not raised these issues to the ministry? It is difficult to find an explanation, but gradually the pipe workers have changed from favored sons into stepsons.

Some time ago in Tyumen a pipeline manufactured by the Chelyabinsk Pipe Rolling Plant ruptured. In response to the minister's questions about the causes of the break, the plant's head engineer answered that it occurred because of a defect in the metal. The plant management and the chief of the VPO immediately received an explanation from the minister that poor-quality metal does not give one the right to produce defective products. All the directors were immediately informed of this fact. But we were not notified about any measures taken concerning the plant that provides the metal. I think that for the benefit of the cause it would be better for this case to receive wide publicity so that the suppliers of the metal would bear their part of the punishment. Otherwise, one comes to the conclusion that it is useless to complain to the ministry about the poor quality of the initial blank pieces.

At one time the quality of blank pieces delivered to us by the Nizhnyytagil Metallurgical Plant deteriorated significantly. Telephone calls and personal visits did not produce the desired result. One batch of metal had to be rejected and a complaint sent to the supplier plant. Its representative recognized that the demands were just but the management of the enterprise sent a complaint to the CPSU Obkom and the ministry concerning what was supposed to be inappropriate actions on the part of the Sinarskiy Pipe Plant. The first deputy minister, S. V. Kolpakov, who at that time was touring the metallurgical plants gave a serious reprimand to the head engineer—

but not of the Nizhnyytagil Plant of the Sinarskiy Pipe Plant, and he instructed the Soyuztrubostal VPO to create a commission to verify the correctness of the actions of the latter. The final result was that our complaint remained in force but our desire to seek justice had been compromised.

Fairly frequently the metallurgical plants do not carry out cooperative deliveries in the branch as a whole. With such a situation each client tries to obtain as many blank pieces as possible by any means, for which good personal interrelations are of great significance. It is dangerous to "fall out" with the suppliers.

The lack of the necessary carryover supply leads to down time of the basic pipe-rolling equipment and makes it necessary to work with a day-to-day supply. In order to avoid downtiming of equipment the plants have been forced to use metal and production without a preliminary inspection of the necessary documents and to grossly violate the technological process. But what happens if they do not violate it? Having examined the blank pieces and discovering a defect, we call the representative of the supplier in order to draw up a bilateral document. The other party, knowing the state of affairs at our plant, is in no hurry to come here. Correspondence begins. There is no other metal and the plant is faced with a choice: either stand idle because of a lack of metal or work with poor-quality materials. In addition, there is the risk of allowing an overexpenditure of existing expenditure coefficients and not staying within the given production cost. It is necessary to make a decision about how to escape the existing situation with the least losses. In all cases the client plant stands to lose.

Very frequently we do not have the materials necessary for observing production technology. In the pickling division of the wire drawing plant, the technological instructions for producing pipes prohibit continuing the work of the pickling bath of the percentage of iron content in the solution is higher than allowed, but the territorial supply agencies have not delivered the acid necessary for replacing the pickling solution. The plant director, the head engineer, and the shop chief know about this. What can be done? Stop production? Hardly anyone will decide to do this if there is the slightest possibility of avoiding it. Everyone understands that the plan must be fulfilled and they try to do this in spite of technology. This is done with the tacit agreement of the managers headed by the plant director, and this undoubtedly does not contribute to strengthening technological discipline. An experienced, technically literate manager makes a decision in deviation from the technology only if he is convinced that this will not lead to mass defects. But his subordinates, having a clear example of arbitrary dealings with technological instructions, display inadmissible independence.

Now the system of indicators of the enterprise, shop, brigade and individual worker and, consequently, the wages are constructed according to the principle "the

more the better." It has taken form over the years and has become convenient and customary, and it is used to determine the leaders in the socialist competition. Individual workers overfulfill the output norm and this means that the production plan is overfulfilled by the section, aggregate, shop, or plant. But the funds for raw and processed materials are issued only for the production plan. It is practically impossible to overfulfill the plan through savings and it is also impossible to artificially impede the overfulfillment of the plan since these indicators are linked to the level of wages of the workers, the class position in the socialist competition, and so forth. There arises a shortage of raw and processed materials, which is compensated for by selling off funds ahead of schedule. When December comes there are no materials. It is impossible to obtain additional funds for overfulfillment of the plan. As a result, they expend the carryover residual. In order to escape from this situation it is necessary to create at pipe plants the proper nondecreasing supply of high-quality semimanufactured products, at least in the amounts stipulated by the normatives. The plants cannot do this through their own forces so they need help from the management of the VPO and the ministry. And if one is to be frank, there should be a radical restructuring of the workstyle for management of the branch.

How does this situation affect the life of the plant collective? Regular utilization of raw and processed materials in production without proper inspection and poor quality lead not only to a deterioration of product quality, but also to a slackening of technological discipline in the collective. At the intercom conference of the plant director the chief of the division for technical control makes a complaint against the shop chief for product quality. Without thinking long, the latter answers: The shop has received poor blank pieces. Although, perhaps, the mass defective work may have had nothing to do with this case. What is he hoping? Nobody can refute his assertion immediately since there are no objective data. By the time the inspection takes place the issue will not be as crucial and, moreover, it might turn out that he was right. The same devices are used by the directors of the plants in the VPO and the ministry.

At one time I had occasion to attend business trips to pipe plants in England and the FRG and gained a fairly detailed idea about the technology for manufacturing pipes. Everywhere we asked the question: how to control product quality?

At first this caused confusion, but when the translator explained in greater detail what we wanted to know the answer was simple: our production technology provides for the necessary quality of the final products and for this reason there is no need for additional control since in foreign countries very high requirements are placed on the quality of the initial blank pieces. There they think that additional expenditures in this technological stage are recouped subsequently as a result of economizing on

metal. For example, at plants of the United States blank pieces for producing especially important pipes with high technical specifications in wire drawing shops are manufactured not on hot pipe-rolling mills, as we do, but by the method of mechanical processing on metal-cutting machine tools, including the drilling of the openings. Even large losses of metal in shavings during this operation do not disturb the foreign specialists. Our technology for producing pipes is just as good as the foreign technology, and the only difference is that we frequently violate it, and not just at pipe plants.

The situation is not being rectified by the existing system of stimulating improvement of product quality either. At first glance it seems that the production of products with the Emblem of Quality is stimulated fairly effectively in ferrous metallurgy. But, in the first place, Gosstandart agencies have to submit a large quantity of materials, and if one takes into account the fact that the Emblem of Quality for products must be approved no less frequently than once every 3 years, the flow of documentation is continuous. The plants are even forced to create special subdivisions for performing this work. At the Sinarskiy Pipe Plant, for example, this is handled by five administrative and management personnel for accountability. In the second place, products with the Emblem of Quality require additional expenditures on production and control which must be compensated for through the corresponding additional payments at the time of product sales. Serious difficulties arise here. The client enterprises are not against having products with the Emblem of Quality and they are glad to participate in the work of the commission for certification, but they refuse to pay extra for them. But the enterprise does not have the right to submit the bill for additional payment without their agreement. Thus the manufacturer sustains direct losses from the sale of these products. The clients discuss this quite logically: they are satisfied with the requirement stipulated by the GOST and voluntarily make up for the difference in price when it is possible to obtain these products at the previous price. Nobody will do this, since there are no such philanthropists in industry. Enterprises of the USSR Ministry of Ferrous Metallurgy go to great lengths to stay within the profit plan, but in spite of this each year the ministry plans an increase in the output of products with the Emblem of Quality, thus increasing nonproductive expenditures. It is difficult for me to judge what advantages the national economy receives from this system, but the pipe industry sustains only losses.

At one of the conferences in the ministry Gosstandart representatives express the idea of the expediency of conducting certification of products of the first quality category according to the methods for the highest category. This innovation would hardly have a radical influence on quality, but expenditures on the certification would increase immeasurably. In fact if the Sinarskiy Pipe Plant when producing little more than 27 percent of its products in the highest quality category is forced to

maintain five engineering and technical workers to fill out the documentation, with the new requirements it would require about 25 people.

In my opinion, certification for the Emblem of Quality should be replaced by certification of existing GOST's for prepared products. If the requirements correspond to the requirements for the Emblem of Quality, the products should be considered to correspond to it. The GOST can be revised for all enterprises simultaneously and there is no need for each enterprise to maintain the special staff for this purpose. The revision in the new certification of the GOST's would remove all problems related to payment for products of high quality since they would indicate the price that envisions additional expenditures for manufacture and control of better quality products.

A large article by Academician V. A. Trapeznikov was published in one issue of PRAVDA for 1985. It expressed the idea that one of the ways of improving product quality was to increase the staff of engineering and technical personnel of the technical control division. In order to solve this problem more painlessly it was suggested that they be excluded from the number of administrative management personnel so that the director could increase the staff of the division for technical control without increasing the strictly normed number of administrative management personnel. In my view, it is impossible to agree with this suggestion. The director has a large amount of responsibility on his shoulders, right down to criminal liability for the quality of products that are produced. The chief of the plant's division for technical control is not under the jurisdiction of the director and the number of workers of the division is strictly regulated by the organization chart. On the other hand, the staff of the division for technical control comprises an insignificant percentage of the overall number of engineering and technical personnel at the plant. Therefore, if necessary, the director can make a decision to increase it. In and of itself, the idea of improving product quality by increasing the staff of the division for technical control, in my opinion, is not only erroneous, but also harmful. A surplus of controllers will produce no less harm than a shortage of them will. In places where the evaluation of product quality is done by a visual examination there is always the subjective factor. If a pipe is inspected by one person who takes personal responsibility for his work, this is one thing, but if there are two—this is something different altogether. The more people who engage in one and the same job, the more they introduce subjectivism and mistakes, which leads to disorganization and complete irresponsibility. And what if these two people have different opinions? Then it is necessary to have a third who must have the right to make the final decision.

From my standpoint, the radical direction in improving product quality lies in strict observance of the technology for producing products. Much here, of course,

depends on the technological equipment. In this stage, in the stage of manufacture, the quality of the future products is already determined.

For an objective evaluation of the activity of the enterprises in the area of labor productivity one should make certain changes in the system of accountability with respect to this issue. Now this evaluation is being conducted through comparing the level of labor productivity with that of the past year and the level of fulfillment of the plan for the current year. It would be expedient to have one more indicator: how many rubles of gross output did the enterprise produce per one worker in industrial production personnel? It is not at all mandatory to include it in the evaluation indicators; there are enough of them already; it is important in order to obtain comparable indicators of the operation of the enterprises.

Why, in my view, is this necessary? The Sinarskiy Pipe Plant provides almost the entire city with water, heating, and hot water from the plant TETs and services the main city roads, the energy network for housing, and other municipal facilities. The government decision to transfer municipal facilities to the jurisdiction of local soviets is not being carried out, and such a transfer is hardly possible in the near future. Far from all plants of our association are working under these conditions. It is logical that some of the industrial personnel of the plant subdivisions employed in municipal services outside the plant are not taken into account when labor productivity is calculated according to the proposed method. Then one obtains an indicator of labor productivity which can be compared with other plants of the VPO. I know that our enterprise is not the only one with this problem; for example, this was written about in EKO by the director of the Electric Locomotive Repair Plant from Novosibirsk, S. S. Gorbenko (see EKO No 5, 1984).

It would be expedient to impose a certain policy including taking workers away from various jobs that are not related to the basic production process by decision of the local soviets and party agencies. A large number of industrial production personnel would be permanently sent to render assistance to construction organizations of the city and oblast, enterprises of the sphere of services and municipal services, and also to render various forms of patronage assistance. Agriculture occupies a special position in patronage assistance. Through the efforts of the plants they are constructing "Asty," complexes for preparing feeds and housing for agricultural workers, they are repairing machines and mechanisms, and mechanizing labor-intensive processes. This area could also include patronage assistance to the general educational schools and hospitals.

Thus, by a decision of the CPSU Central Committee, from April through October the Sinarskiy Pipe Plant will have up to 100 machine operators in the fields. Plant workers are being involved in the preparation of seed potatoes for planting, they are doing weeding, preparing

hay, and harvesting the crops. Up to a thousand of our workers are doing harvest work in the fields each day. I am not against patronage assistance to the kolkhozes and sovkhozes; at the present time this simply cannot be avoided. But, in my opinion, labor expenditures should be reduced immediately. In Kamensk-Uralsk, the assignment for patronage assistance in harvesting the crops for industrial enterprises is planned in physical volumes. The pipe plant annually receives an assignment to harvest up to 1,000 hectares of potatoes. Here the management of the sovkhoz under our patronage does not bear responsibility for harvesting the crop with the least labor expenditures. Why improve agrotechnology when they will bring patronage workers and the weeding can be done by hand; why use potato harvesting combines when one can use an unlimited number of plant workers to do the harvesting.... It has become a tradition that an inadequate amount of technical equipment is assigned to fields where plant workers are doing the harvesting. This leads to constant idle time of the workers, and the motor vehicles allotted by the plant for hauling the crops are not fully utilized. Here all the losses are covered at the expense of the industrial enterprises.

Our plant was forced to acquire potato diggers and tractors in order to provide the work front for harvesting on time. But even so the sovkhoz management finds good pretexts for retarding the rates of the harvest in order to have the possibility, if necessary, to reproach the patronage assistance for poor work. They are convinced that the hectares assigned to the patronage assistance will be harvested in any case since it is the manager of the industrial enterprise who is primarily responsible for this and not the sovkhoz director. The resolutions of issues between the director of the plant and the director of the sovkhoz evolves into the following typical dialogue:

"The plant workers are standing idle and failing to meet the harvest deadlines!"

"You have been given your assignment so go ahead and harvest...."

"But the technical equipment is not providing the necessary work front and it is the fault of the sovkhoz leaders!"

"Take some spading forks and dig the potatoes by hand...."

Complaining about the actions of the sovkhoz management in the party raykom, as a rule, does not produce positive results: the plant director is always "extreme" in these issues.

Incidentally, attempts have been made to regulate these relations in the country. In the Pervouralsk CPSU Gorkom, the Novotrubny Plant is given an assignment to send a particular number of people to Achinskiy Rayon for the harvest for a particular period of time. The number of people sent and the time periods for departure are

strictly monitored. All the other issues related to the organization of productive labor are the responsibility of sovkhoz workers, that is, they are motivated to do as much as possible in the shortest possible periods of time. As you can see, it is one oblast, the patronage workers are from one VPO, but there are different approaches to solving the problems.

There are also other ways of reducing labor losses in agricultural work. For example, there is the initiative of Verkh-Issetskiy and Tugulymskiy rayons in Sverdlovsk Oblast for creating permanent harvesting tractor detachments. The patronage workers sent people and technical equipment at the request of the sovkhozes only at the times when the farm needs them and to perform a particular volume of work. As a result, the number of workers enlisted last year decreased by 200 as compared to 1983.

There can be only one conclusion: the planning of the amounts of patronage assistance in hectares of harvested areas leads to inefficient utilization of resources, and it is more expedient to determine the number of people sent to render assistance to other organizations and also the time of their work. This point must be extended to all kinds of patronage assistance.

The problem of paying workers who have been temporarily sent to other enterprises has not been solved either. One thing is extremely clear: the worker must retain his average earnings. And from which cash supply and how much should he obtain? As a rule, all expenditures from the wage fund are the responsibility of the patron enterprise. But the appetites of those receiving the patronage for practically free labor force are constantly increasing.

The more they get the more they want. City authorities are beginning to demand workers even if this is not justified by a critical need. For example, the plant dining rooms of the Sinarskiy Pipe Plant service the food combine of the Kamensk-Uralsk Dining Room Trust. Through its own forces the plant conducts repair of the buildings and equipment, provides transportation, and grants other benefits to workers of the food combine, but the combine never has a complete staff. The plant management cannot allow the dining rooms to halt operation and must maintain up to 70 people for work in the dining rooms. Is it possible to solve this problem in another way? Undoubtedly it is. One need not go far for a positive example. In Pervouralsk the food combine, which services the pipe plant, utilizes industrial work methods and manages with a relatively small staff, providing for high quality of preparation of food, of which the management of the trust of dining rooms and the management of the gorispolkom are quite well aware.

I think that it is necessary to provide the proper control and accounting for the expenditure of labor resources. So far the enterprises do not have this kind of accounting since the worker who has been sent for temporary duty must retain his average earnings, which is not always

within the framework of legality. For this reason the manager, as they say, is forced to "bury the traces." If at the present time it is impossible to do without the assistance of industrial enterprises, it is necessary to establish a certain policy regarding this issue and not turn the solution to these problems over completely to the local authorities. We must remember that every diversion of workers from production has a fatal effect on the work of the industrial enterprise and this should not be abused without control.

In my opinion every diversion should be corroborated by a document which indicates the number of workers required, the time period, and how payment will be made. The existence of such a document will increase the responsibility of the manager making the decision concerning patronage assistance. It should be made only by the ispolkom of the rayon or city soviet of people's deputies since it is not acceptable to refer to decisions of party agencies and certainly not to "tie their hands." According to the decision that was adopted the plant will be able to issue an order or instruction—the primary document for subsequent accounting for the number of workers taken outside the plant during the year. This system of accounting will make it possible to objectively evaluate the work of each enterprise as compared to other enterprises of the VPO in the area of increasing labor productivity not only for the year, but for individual time segments within the year. Moreover, it will make it possible to objectively evaluate the activity of local party and soviet agencies and also evaluate how and with what funds they solve various problems. Giving publicity not only to positive examples but also to significant shortcomings in the work of local soviet and party agencies does not contradict the spirit of the times.

For expansion of reproduction, reconstruction of fixed capital, and augmentation of circulating capital and property of the population

For simple reproduction (replacement of withdrawn fixed capital)

For maintenance of fixed capital in working condition (capital and current repair)

For replacement of equipment and technological fittings that have been withdrawn

For replacement of withdrawn instruments and less valuable production property and inventory

Attention is drawn to the fact that a significant place is occupied by the consumption of metal for maintaining fixed capital in working condition and less—to replace capacities of withdrawn fixed capital because of wear and tear and obsolescence. This ratio is basically typical for the extensive direction of reproduction of fixed capital. Therefore improvement of the structure of production and consumption of metal is the most important task for the metal machine building complex.

## Footnote

1. During the first year of assimilation, according to existing laws, one is to establish a plan for 0.8 of the planned capacity.

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## Changes Made in Metal Machine Building

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[Article by L. L. Zusman, professor (Moscow): "Structural Changes in Metal Machine Building Complex"]

[Text] One of the most important complexes in the country, which exerts an immense influence on the implementation of the economic strategy earmarked by the 27th CPSU Congress, is the metal machine-building complex. Implementing the resource-saving policy—a decisive source of satisfying the growing needs for materials, fuel and electric energy—depends on it to a considerable degree. In his report at the June (1986) Plenum of the CPSU Central Committee, Comrade M. S. Gorbachev emphasized that more than one-fourth of the increase in national income under the 12th Five-Year Plan was to be achieved as a result of economizing on resources.

Metal consumption in this complex is characterized, according to our calculations, in the following way (in percentages):

	1980	1985
	41.5	44.0
	18.0	20.0
	25.0	22.0
	6.1	4.5
	9.4	9.5

## Reserves of Metallurgists

It must be noted that in the past period there have been favorable tendencies in the structure of the production of ferrous metallurgy. Thus with an overall growth during 1971-1984 in the production of rolled metal manufacture of 1.3, the output of economical kinds of it increased as follows: rolled metal from low alloy steel—by a factor of 1.5, with thermal processing for hardening—2.3, bent

profiles—5.2, thin cold rolled sheet metal—1.9, and sheet metal with coatings—manufacture of 2. Plus tolerances have been reduced for various profiles of mass kinds of rolled metal and the durability indicators for mass carbon and low alloy grades of steel have been differentiated.

These favorable tendencies should be strongly reinforced under the 12th Five-Year Plan. as a result of increasing the role of progressive, economical kinds of metal the national economy's need for it will be satisfied with considerably slower rates of growth of its production. Thus while increasing the output of prepared rolled metal during the five-year plan by only 11 percent, it will be necessary to achieve an increase in the overall industrial production of 5 percent, and for machine building and metal processing—40 to 45 percent. And it is planned to increase the output of rolled metal without increasing the extraction of ore or the production of iron and coke.

What are the ways of carrying out these tasks? We shall try to consider them in this article. The most important direction is technological improvement of production. First and foremost it is necessary to accelerate the change in the structure of steel-smelting production as a result of replacing marten furnaces with more productive and economical oxygen converters and partially with electric steel smelting furnaces. The converters are more adaptable to the technology for continuous smelting of steel, obtaining a cast piece instead of an ingot, and the continuous method of smelting, as we know, produces a significant increase in labor productivity and a savings on metal of about 10-12 percent.

In spite of the fact that the continuous process of smelting steel was created first in the USSR, it is being introduced at extremely slow rates. The proportion of oxygen converter steel is also increasing slowly: it has increased from 28.5 percent in 1980 to only 32.3 percent in 1985 and electric steel—from 10.8 percent to 12.2 percent, respectively; the proportion of marten steel has dropped from 60.7 percent to 55.5 percent, and this technology continues to predominate. The slow change in the structure of steel-smelting production is explained partially by the shortcomings in planning. During the period of replacement of marten furnaces with converters there is a certain reduction in the volume of steel smelting while at the same time the production plan is increasing. One gets the impression that capital investments for changing the structure of steel smelting production are not producing an effect and thus the labor productivity is decreasing. This causes a negative attitude toward their replacement. Finally, the fact that machine builders are not doing a good job of delivering equipment also has an effect on the continuous smelting of steel.

The earmarked change in the structure of steel-smelting production and the rates of introduction of the continuous method of smelting steel can hardly be considered

adequate. In the future it will be necessary to force the changeover to these progressive processes in order to increase the savings on metal and to improve the structural ratio between the volume of steel smelting and the output of rolled metal. The coefficient of output of rolled metal in comparison to the consumption of steel for rolled metal will increase basically as a result of the utilization of cast blank pieces instead of ingots. This is one of the sources for reducing the metal-intensiveness of the national income.

The next large source for economizing on metal is improvement of the structure of rolled metal, mainly as a result of increasing the proportion of rolled sheet metal, especially thin steel up to 4 millimeters and cold rolled steel with a thickness of 0.5-1.2 millimeters.

We have a predominance of casting production and the processing of high-grade profiles of rolled metal and cast pieces in the metal-cutting production, but the stamping of sheet metal is poorly developed. Welding is also relatively poorly developed. The fact is that the output of cast pieces is not regulated centrally, as distinct from rolled metal, and therefore there is a high proportion of cast metal. Ferrous metallurgy specialists have repeatedly drawn the attention of managers of machine building to the need to increase the proportion of sheet metal in the consumption of rolled metal. Machine builders have had and still do have a negative attitude toward this recommendation, blaming the great difficulties in changing the structure of their metallurgical production. Unfortunately, the Gosplan maintains this same position.

For 1990 it is planned to produce about 50 million tons of rolled sheet metal (instead of 45.5 million tons in 1985). At the same time it is planned to increase the production of automated complexes and lines for sheet and three-dimensional stamping. It will be necessary to promptly begin the planning and issuance of orders for the manufacture of sheet rolling mills under the 13th Five-Year Plan.

The structure of the assortment of other kinds of metal products also continues to lag behind modern machine-building requirements. We do not produce enough low-alloy steel or rolled profiles with increased durability, designer and bent profiles, metal with anticorrosion coatings, and so forth.

An important factor in the stabilization of the volume of production and consumption of metal during 1991-2000, and then also a reduction of volumes is the steady improvement of its quality. A large role should be played by nonfurnace processing of steel. It will increase by a factor of more than 2.5 in 1990 as compared to 1985.

### **The Main Source—Economical Metal Consumption**

The main source of potential savings on metal (about 65-70 percent) lies in resource-saving consumption, above all in such branches as machine building and construction, which are the largest consumers of metal.



As foreign experience shows, the growth of the volume of machine-building products (+) can and should be accompanied by a reduction (-) of the volume of metal consumption. Thus with an increase in the volume of machine-building output in the United States of 14.6 percent in 1984 as compared to 1981, the volume of metal consumption decreased by 15.5 percent, in the FRG these figures were +4.2 percent and -4.0 percent, in England +0.7 and -2.6 percent, and in France +3.3 and -8.9 percent. In Japan, with an extremely large increase in the volume of machine-building output—29.5 percent—the metal consumption increased by only 3.8 percent.

Under the conditions of the planned development of the socialist economy this approach should be manifested even more intensively. Therefore there is sufficient justification for the assertion that with resource-saving development of our national economy, there cannot and should not be an increase in the volume of production and consumption of metal products in the distant future.

Under the 12th Five-Year Plan it is intended to reduce the proportional metal-intensiveness of machines and equipment by 12-18 percent and reduce the utilization of rolled metal (per 1 million rubles' worth of commodity output) by an average of 27 percent, and steel pipes—by 20-22 percent.

The savings on metal per 1 million rubles' worth of commodity output ensues to a certain degree from the anticipated growth of the unit productivity of all newly assimilated equipment by a factor of 1.5-2 as compared to analogous equipment that is produced, and also from the priority development of the basic branches of machine building—machine tool building, computer equipment, and the electrical equipment and electronics industry, which are distinguished by reduced metal-intensiveness. As compared to the average for a machine building, the metal-intensiveness of machine tool building products is 17 percent lower, for machine tools with program control and processing centers—lower by a factor of 2, electrical equipment products—by 50 percent, instrument building—by a factor of 11, and for electronic products and computer equipment—many times lower. These branches should play the leading role in improving the structure of all machine building and other branches of the national economy.

The improvement of the branch structure of machine building itself leads to a reduction of its material-intensiveness. The proportion of one of the least metal-intensive branches—instrument building—in 1980 had increased by a factor of 1.8 as compared to 1970, and by 40 percent in 1984 as compared to 1980, and the proportion of the most metal-intensive branch—heavy and transport machine building—decreased. As our calculations show, as a result of the change in the branch structure of machine building in 1980 as compared to 1970 the average metal-intensiveness of machine-building products on the whole decreased by 8 percent, which

released about 5 million tons of metal product, and in 1984 as compared to 1980 it had dropped by an additional approximately 3 million tons.

Economical utilization of metal depends to a considerable degree on the preparation of the consumers. Unfortunately, cases show that machine builders are not ready enough to change the practice of utilizing rolled metal. Rules and norms for calculating and planning have become outdated, they do not have the necessary base for processing metal with increased durability, and the coefficient of the utilization of metal is not increasing over the decade.

Because of the inadequate reliability of designs of machines, equipment, and structures, they are withdrawn prematurely, they must be replaced ahead of schedule, and numerous repair jobs are conducted. These factors give rise to an additional need for metal products.

An appreciable reserve for reducing the metal-intensiveness of machine-building is the differentiation of production of machines according to capacity and productivity. But this is being poorly utilized. Thus because of the fact that we do not have enough trucks with small capacities (1.5 tons and less), trucks with capacities of 3.5 tons are used for shipping small cargoes. Instead of lightweight, small metal-cutting tools we are producing universal machine tools that are intended for processing larger pieces, and so forth. And at the same time the development of coal deposits is not provided with trucks with capacities of 100 tons and more. Therefore the unit capacities of machines and equipment should be increased within economically justified limits and at the same time it is necessary to increase the output of equipment which small capacities for particular purposes, including equipment suitable for utilization on individual or cooperative garden plots.

The deepening of production specialization in machine building is also an important source for economizing on metal because of the possibility of utilizing specialized means of labor, progressive technology, and skilled production personnel. At the present time the manufacture of many kinds of machines and equipment of the same type is dispersed among many machine-building enterprises. It is not difficult to imagine the excessive expenditure of metal and labor caused by this.

Significant progress in public production and the demand has aggravated the problem of adapting modern large-scale industrial production to the latest requirements advanced by the scientific and technical revolution. Practice shows that small specialized enterprises can flexibly satisfy needs for new kinds of products better than large ones can. We need an optimal combination of industrial enterprises with large capacities and



small specialized enterprises. It is necessary to technically reequip small industrial enterprises, adapting them for flexible service and above all the needs of a given rayon or oblast.

When solving problems of specialization and cooperation special attention should be devoted to the structure of the metallurgical production of machine building. At the present time it is inefficient: a considerable proportion is taken up by iron and steel smelting production and mechanical processing in metal-cutting production while there is inadequate development of forge-stamp and welding production. The proportion of the latter should be increased. This task could be successfully carried out by creating an independent specialized branch for producing general machine-building products, which was written about in EKO No. 6 for 1984.

The existing system of planning is a serious obstacle to improving metallurgical production. It does not contribute to bringing the size of the blank pieces closer to the size of the parts since the planning is done in tons. When the mass of the cast, stamped or forged pieces is reduced for one shop or another, in order to fulfill the plan in terms of the production volume in tonnage it is necessary to increase the number of items. In order to measure the volumes of the production of cast, welded and stamped pieces, in our opinion, one should use the indicator of the conventional (translated) ton. This would make it possible to reflect more adequately the labor-intensiveness and precision of the manufacture of blank pieces by machine building.

Comparing the proportional metal-intensiveness of technical equipment in domestic and foreign productions will contribute to revealing reserves for reducing the metal-intensiveness of machines and equipment. In this connection there is considerable interest in the work done in institutes of the Ministry of Agricultural Machine Building, the Ministry of the Automotive Industry, the Ministry of Machine Building for Light and the Food Industry, the Ministry of Chemical Machine Building and the Ministry of Heavy Machine Building (these five ministries account for approximately 70 percent of the metal consumed in machine-building branches) for comparing the design metal-intensiveness of machine-building products of the USSR and the United States. Although for a number of kinds and models of equipment we have lower or the same proportional metal-intensiveness, on the whole it is appreciably higher. The increased design metal-intensiveness of machines and equipment leads to an overexpenditure in consumption of 4.5-6.0 million tons of metal products each year.

The most important reasons for the increased proportion of metal-intensiveness of a number of domestic machines and equipment is a distinction in the structure

of the design materials used in machine building. The low proportion of aluminum, plastics, and thin sheet steel, and the relatively high proportion of cast iron and especially cast steel.

### **Repair of Outdated Technical Equipment—Extravagance!**

According to our calculations, 10-15 percent of the savings on metal products can be achieved through regulating capital repair of fixed capital and promptly replacing worn-out and obsolete equipment.

During 1986-1990 as compared to the preceding five-year plan there is an essential increase in the overall volume of capital investments with their sharp reorientation toward reconstruction and modernization, which should lead to a reduction of repeated capital repairs. But there is still the important problem of reducing to optimal amounts self-service of enterprises of nonmachine-building branches for capital repair, reconstruction, and modernization of the active part of the fixed capital belonging to them and the manufacture of non-standard equipment, instruments, and technological fittings. Nonmachine-building branches now have more than two-fifths of the unionwide stock of metal-processing tools and forge-press equipment in order to carry out this work.

As early as the 25th CPSU Congress attention was drawn to the fact that the repair base was dispersed beyond all measure. Since that time the situation has changed significantly. The measures conducted for improving the economic mechanism open up the path to firm service of machine-building enterprises. In our opinion, the effect of the indicator of deliveries should be extended to services. It would be expedient to equate the performance of these services in terms of volume, content, and contractual deadlines to the fulfillment of contractual commitments for product deliveries. It is also necessary when establishing production plans for machine-building enterprises to plan the volume of contracted services which they must render during one planning period or another.

Not enough is being done to modernize equipment through the forces of manufacturing enterprises. In this connection attention should be given to the experience of foreign firms producing technical equipment. They are willing to purchase or accept for modernization the machines they have manufactured previously or restore the initial parameters of the technical equipment or bring them up to the level of the latest new model. This kind of experience in updating technical equipment deserves to be extended in domestic machine building and can service one of the important sources for economizing on metal and labor expenditures.

And so we have considered the three most important sources for economizing on metal—for their improvement of the quality of metal products and their assortment in ferrous metallurgy, as a result of which it is possible to obtain about 20 percent savings, improvement of the level of metal consumption in machine building and construction—65-70 percent, and regulation of capital repairs and prompt replacement of worn-out and obsolete fixed capital—another 15-10 percent savings.

In order for this development to be achieved in the metal machine-building complex important structural changes must take place both within each branch and in the interbranch cross-section during 1986-2000. In ferrous metallurgy it is necessary to improve the ratio between the volume of prepared rolled metal and steel as a result of economizing on the latter, mainly through introducing continuous smelting of steel; between the volume of prepared metal products and the volume of extraction and utilization of iron ore, manganese ore, coking coals and natural gas—as a result of the change in the ratios between the stable volume of smelting of iron and the growth of the volume of prepared metal products. At the interbranch level—as a result of improving the assortment and improving the quality of metal products, improving the ratio between the volume of metal consumption and the volume of products of the procurement base for machine building, as a result of technical reequipment of the procurement base and improvement of its production and technical structure, as a result of bringing the weight and sizes of blank pieces closer to those of the prepared items, and mechanization and automation of assembly and finishing.

There must be a considerable change in the reproduction structure of metal consumption. It is necessary to increase the proportion of it that is used for making up for fixed capital that has been withdrawn and to reduce the proportion for maintaining fixed capital in working condition and prolonging its service life. Increasing the unit capacities of assimilated kinds of technical equipment and at the same time differentiating its manufacture depending on the national economic needs will contribute to economical metal consumption. All these sources of resource savings should be put into operation.

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#### **Plans Require Better Economic Substantiation**

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[Article by Ye. N. Kozakov, doctor of economic sciences, Ural State Institute for Planning Enterprises of the Mining Industry (Sverdlovsk): "Economic Substantiation of Plans"]

[Text] In recent years the requirement placed on economic work during planning have increased sharply. From a particular intrabranh substantiation of technical solutions we are changing over to a broad socioeconomic evaluation of the prospects of the development of the productive enterprises; from isolated substantiation of technical and organizational decisions in various stages of preplanning and planning work—to a comprehensive evaluation of solutions that are adopted; from solving a narrow problem of satisfying the needs of the corresponding branch for a given kind of mineral raw material—to efficient interbranch utilization of minerals; from traditional "manual" methods of calculation—to the utilization of modern methods of economic and mathematical modeling.

Directive agencies have earmarked the general directions for improvement of the economic substantiation of plans so that their technical and economic level will correspond to the latest achievements of science and technology. But still many problems of economic substantiation of plans have not yet been solved. Let us consider them using the example of ferrous metallurgy mining enterprises of the Urals.

#### **Scientific Support**

A paradoxical situation has developed in the planning of industrial production: while the technical solutions are based mainly on the results of scientific research, the most important socioeconomic problems related to the distribution of enterprises and the optimization of their production capacities, the economic substantiation of projected directions of scientific and technical progress, and environmental protection—these do not have the usual preplanning scientific research base. The systems for the development of branches that are drawn up by branch planning institutes are not preceded by socioeconomic research either.

In the middle of the 1950's, without having a research base, our institute began to plan the assimilation of the Kachkanarskiy iron ore deposits in the Urals. Now the largest ore-enriching combine in the country has been constructed there. The construction of a second combine is being envisioned in the same region, but the possibilities of providing it with resources, above all, labor resources, have not yet been investigated. Nor have they investigated the scale of utilization of construction materials that are obtained as a byproduct—gravel and sand. They have not studied the ways of optimal development of the social and production infrastructure in the region, they have not earmarked measures for protecting the environment in connection with the construction of the new enterprise, and so forth.

#### **The Influence of Natural Factors**

One must recall that in the extraction industry the effectiveness of planning variants is directly linked to the influence of natural conditions on economic indicators.

One must not underestimate natural factors but it is also inadmissible to exaggerate their significance, blaming any deterioration in economic indicators on the complications of mining and technical conditions for development. One example. The richest deposits of iron ore of the renowned Ural Mountains of Magnitnaya, Vuisokya and Blagodat, like the ore of other, less well-known deposits have been fully worked. In order to provide ferrous metallurgy of the Urals with raw material, the ore is shipped from the central area and even from the Kola Peninsula. According to calculations of the Institute of Economics of the Ural Scientific Center, the annual national economic harm here amounts to 90-100 million rubles. But it is not only a matter of economic losses. The railroads cannot always handle the shipments and there are interruptions in the operation of the blast furnaces.

Ural geologists were given the task of strengthening the local base. At the beginning of the 1970's in the regions of the current ore-enriching enterprises they discovered iron ore at a depth of 800-1200 meters. According to the research conducted by that time the cost of extracting the ore would increase by 15-20 percent for every 100 meters they had to go down. Moreover, the development of the deep part of the deposit was economically inexpedient in the foreseeable future. The planners in Uralgiprorud had to pay constant attention to these dependencies. It turned out that the researchers used a method which might be called "deductive." They took the indicators for the group of deposits as a whole that were joined into one mining industry region and compared them, say, for the past 10 or 20 years. Mining work became "deeper" during this period and the economic indicators, naturally, deteriorated, which was attributed wholly to the natural resources and extrapolated for the future. Unfortunately, this method of accounting for natural conditions became widespread in the extraction industry.

Our calculations showed that the influence of natural factors were severely overestimated by the researchers. The increase in the production cost of extraction caused by the deepening of mining work, according to our calculations, was 2-3 times less than the amount determined by the preceding research.

And the direct result of this work was that it proved the economic expedience of prospecting and developing the aforementioned deposits of the local Ural base. (Now these deposits have been fully investigated and are beginning to be assimilated.) But considerably more important are its "indirect," but more general results.

In the first place, if one does not exaggerate the significance of natural factors when developing ore deposits the objective possibilities of technical progress make it possible to neutralize the negative influence of the deteriorating natural conditions.

In the second place, exaggerating the significance of natural conditions weakens the attention paid to other factors in the reduction of the economic effectiveness of

the development of deposits: organizational (weakening of planning, technological and labor discipline), technical (the introduction of ineffective new technical equipment, the lack of a comprehensive approach to mechanization of labor-intensive processes, and so forth), and economic (inadequate stimulation of good work, imperfection of methods of economic substantiation of technical solutions, and so forth). Attention to these factors can mobilize great reserves that are not yet utilized.

### Formation of Production Capacities

The capacities of the enterprises are now established on the basis of narrow branch interests. When determining the economic effectiveness of capital investments one takes into account only the production expenditures, and expenditures on environmental protection and the creation of the complex of normal living conditions for the workers and their families are far from fully taken into account.

In the mining industry it is especially important to evaluate the national economic damage arising because of the possible reduction of the volumes of production at an existing enterprise because of the poor ability of the extracted raw material to compete. So far no attention is paid to this damage in planning practice. Yet it is quite real and is formed from the damage in basic production which should be measured by capital investments for the creation of compensation capacities minus the funds for technical reequipment of the existing production; from the damage caused by underutilization of the production infrastructure; expenditures on retraining of personnel; and the damage caused by underutilization of the complex of living conditions that have been created.

For enterprises of the Ural Mineral Raw Material Base, which is one of the "oldest" in the country, the determination of damage is of principal importance since with the existing methods of calculation it is economically expedient to reduce the extraction at the Ural ore enrichment enterprises and to ship in iron ore from distant regions. But if one takes into account more fully the expenditures on environmental protection (Footnote 1), on the creation of a complex of living conditions, especially the damage from reducing the volumes of production, the idea of the optimal capacity of existing enterprises of the local base changes significantly—it turns out to be economically effective to maintain the volumes of production that have been reached at a number of mines.

### Substantiation of Technical Supply for Production

The alternative method of determining the effectiveness of new technical equipment prevails in planning practice. One of the variants of technical substantiation is recognized to be economical and the others are rejected. Yet it is much more important to determine the priorities in technical progress on the basis of an economic analysis of its various, but necessarily real areas that are subject to quantitative evaluation. Thus the technical

and economic analysis of the basic directions for technical progress in the ore extraction industry and ferrous metallurgy led to the conclusion that for the next 5 years comprehensive utilization of raw material and mechanization of auxiliary processes should be considered priorities (Footnote 2).

Since the application of new technical equipment does not always turn out to be economically expedient, for the developers there frequently arise considerations about the imperfection of criteria for economic effectiveness.

The experience in planning ore-enriching enterprises of the Urals convinces us that it is not at all a matter of the poor quality of the economic criteria. Corroboration of this is the change in economic indicators when equipment of the same type with increased unit capacity is created for the mining industry. There is some reduction of the labor-intensiveness of extraction, but the expenditures carried over for preparing the mining face, loading and transporting the mass of ore increase since the price of the new equipment is extremely high. Thus during the past 20 years the productivity of one-bucket excavators increased by a factor of 2.4 but the proportion of capital investments for one cubic meter of loaded ore increased by a factor of 2.7. The increase in proportional capital investments per unit of increased capacity of the same type of equipment has the character of a stable tendency which is also the case for other kinds of mining and transportation machines. Of course, with the help of "improved" criteria one can justify this negative phenomenon in our economy. It is obvious, however, that it would be more correct to develop mining machine building and, on this basis, increase the effectiveness of the operation of new equipment.

Economic theory and planning practice have turned out to be uncoordinated in their methods of accounting for the time factor. Researchers extensively utilize the method of discounting expenditures, that is, bringing forward expenditures from later periods to the so-called "current moment," which is usually considered to be the first year of construction. Moreover, the amount of estimated capital investments that will have to be made over 5 years are decreased by more than one-third in the economic calculations in order to "put them into comparable form" and over 10 years they are decreased by more than half.

When drawing up plans specialists are very cautious about such "translations." And this is certainly not because the people working in the planning institutes are unskilled economists who do not see the differences in the value of expenditures at various times. The fact is that the method of discounting is not coordinated with the reality of management and economics (Footnote 3).

The Gosstroy and USSR State Committee for Science and Technology have approved provisions for evaluating the quality of planning documentation on the basis of comparing the technical and economic indicators

obtained for the corresponding stage of planning (TEO, plans, working documentation) with the so-called base values established in the assignments for planning. Two problems arise here. The first is the development of base economic indicators for evaluating the quality of technical and economic substantiations (TEO). In the processing industry this can be solved on the basis of establishing progressive proportional indicators of construction cost, material-intensiveness, and so forth. But in the extraction industry where the conditions for the distribution and development of deposits of minerals are specific, where there are no two deposits with similar conditions for construction and operation, the average indicators cannot be fruitfully used for evaluating the quality of the TEO.

The second problem is that with the existing technology for planning, the drawing up of the working documentation which is used directly for construction is not accompanied by calculations of technical and economic indicators. Two or three years and sometimes more pass between the drawing up of the plan for the mining enterprise and the development of working documentation. During this period the technical supplies of production processes changes, technical parameters and indicators of the utilization of equipment become more precise, and the conditions for working the deposits become more definite. As a result of all these changes, the technical and economic indicators must be adjusted for the working plans, and only after this can they serve as an objective basis for evaluating the quality of the working documentation.

### **Comprehensive Utilization of Resources of the Earth**

There is a widespread opinion that the main obstacle to solving this problem is the branch principle of management which generates a narrow departmental approach. There is no doubt that interbranch organizational and economic problems must be solved. But this process has been drawn out and no end to it is in sight. Yet an analysis of accumulated experience in the development of mineral deposits convinces us that even with the existing interbranch ties mineral raw material can be utilized comprehensively in cases when this is envisioned by the projects and national economic plans. The positive experience in comprehensive utilization of ores of nonferrous metals is generally known. Thus at the Ust-Kamenogorsk Lead and Zinc Combine they extract 17 components of the 20 that are contained in the ore, and at the Chinkent Lead Plant imeni M. I. Kalinin—14 out of the 15. In the Urals, when developing the Kusinskiy deposit, in addition to the basic component, iron, they extracted others—vanadium, titanium, and sulfur. From the Kachkanarskiy ore iron and vanadium can be extracted with a high level of economic effectiveness. From wastes from enrichment in Sverdlovsk Oblast alone they produce more than 5 million cubic meters of gravel. About 40 percent of the lime extracted by mining enterprises of Ural ferrous metallurgy is used in other branches.

But the projecting and planning of comprehensive utilization of raw material has not yet become the norm. There is no economic substantiation of the national economic expediency of the national economic expediency of comprehensive utilization of raw material, no determination of the range of extracted components in connection with the clarification of the need, and so forth. Usually these tasks are resolved through the distribution of expenditures that are common for a number of components in proportion to their value expressed in existing wholesale prices. Here the extraction of the accompanying components is not always economically expedient.

In our institute in these cases we observe the principle of creating economic conditions that are known to be favorable for comprehensive utilization of raw material. In the 1960's when we solved the problem of assimilating the Kachkanarskiy deposits, whose ore contains only 15-16 percent iron (on an average for the country this amount is now 30 percent, but at that time it was about 50 percent), the maximum expenditures within the limits of profitability of production of vanadium went for this "accompanying" component. As a result the production cost of the "basic" component, iron, decreased, and the economic expedience of utilizing Kachkanarskiy ore for smelting iron at the Nazhnytagil Metallurgical Combine was proved. Life has shown that this approach was correct under those conditions. But now the situation has changed radically. Prepared Kachkanarskiy raw material has come to be able to compete quite well even without the deduction of part of the expenditures for vanadium. Additional payments for it can be reduced, the cost of vanadium products can be decreased, and economic prerequisites can be created for its more extensive and effective utilization in the national economy.

### **Economic Evaluation of the Harmful Effects of Industrial Production on the Environment**

These issues have almost not been developed yet. One can object that we have published the "Temporary Methods for Determining the Effectiveness of Expenditures on Measures for Environmental Protection" and that the standard methods have a special section entitled "Determination of the Effectiveness of Capital Investments in Environmental Protection." But if one is to be guided by these materials, the effectiveness of capital investments and the protection of nature must be defined as it is in industrial production—strict commensurability of economic results and expenditures to produce them. Everything is clear with expenditures for protection of the environment, but we have not yet learned to determine the economic results. This pertains to pollution of the water and air basins, the disturbance of the biological balance, the destruction of the earth's surface, and other violations of the biosphere.

It would seem that it is necessary to take a different approach to expenditures on the protection of nature. First of all it is necessary to distinguish two kinds of

damage caused to the environment: that which can be compensated for and that which can be prevented (or eliminated). Damage that can be compensated for is inevitable with the modern level of technology. In the mining industry this is compensation with means of agricultural production for assimilating new land to replace that which has been taken away, expenditures on the creation of irrigated fields because of the formation of pits in the zones of mining work, and so forth. The preventable kind of damage includes purification of waste waters, dust removal and gas purification, recultivation of land, and so forth. Principally different approaches must be taken to evaluating the damage, depending on the kind. If for the first kind the main thing is correct determination of its absolute amount, for the second kind it is the determination of expenditures on preventing or eliminating the damage. In this case the task consists not in comparing damage and expenditures, but in selecting the most economical variant for protecting nature. Usually reducing expenditures on protection is not reflected directly in the volumes of production or the quality of the industrial product and therefore people try to reduce them in all stages of the investment process, beginning with planning. In order to change this attitude, they should be singled out, normed, and not included in the calculations of the absolute effectiveness of capital investments.

### **Feedback Is Needed**

The Basic Provisions for the Formation and Utilization of Economic Funds for Planning and Research Organizations which went into effect in January 1986 will contribute to raising the technical level of planning decisions and economizing on resources. In keeping with this document, the fund-forming indicators, when determining the material incentive fund for planners will be: reduction of estimated cost of construction; reduction of number of workers at planned enterprises; the assignment for economizing on fuel and energy resources; and reduction of the labor-intensiveness of production.

The substantiation of the technical supply for production is inseparably linked to the time periods for achieving the planned indicators. We analyze the condition of the actual assimilation of plans of Ural ore-enriching enterprises. Analysis showed that so far the basic attention of production workers is concentrated on the assimilation of the planned capacities; the proper attention is not yet being devoted to the achievement of economic indicators. Therefore even after the assimilation of the planned technology in the achievement of the basic planned technical parameters, the economic indicators are not reached for a long period of time. Feedback works very poorly in the system of "plan-production." Ore-enriching enterprises are not economically motivated to achieve the planned technical and economic indicators. In order to change the situation it is necessary to create a mechanism for economic stimulation of the assimilation of planned technical and economic indicators. In our opinion, the essence of such a mechanism

could consist in the following: in each specific case it is necessary to calculate the losses in the national economy during the period between the startup of capacities and the achievement of the planned economic indicators. These losses could be expressed, for example, by the amount of profit that was not received. Losses calculated according to the plan should be regarded as normative. When the actual losses exceed the planned ones this is direct damage caused to the national economy during the period of assimilation. The total of normative losses could be included in the cost accounting sphere of the enterprise so that reduction of losses could be regarded as savings, and damage—as a cost increase of the product.

The problems considered here do not exhaust all the areas for improvement of economic work in planning. It will be necessary to make cost accounting more effective in planning organizations, to improve the instructional-normative base, to regulate information work, to introduce economic and mathematical modeling more expediently into planning, and so forth.

#### Footnotes

1. One must keep in mind that since in the central regions the working of deposits involves taking fruitful land out of agricultural circulation, expenditures on the protection of nature are considerably higher here than in the Urals.

2. For more detail see GORNYI ZHURNAL, No 11, 1982, pp 23-27.

3. For more detail see Agoshkov, M. and Kozakov, Ye., "Accounting for the Time Factor in Economic Calculations for Mining," VOPROSY EKONOMIKI, No 11, 1985, pp 72-75.

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#### Assistant Manager Functions Examined

18200005j Novosibirsk *EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO)* in Russian No 8, Aug 87 pp 146-154

[Article by Leonid Vasilyevich Vlasov, candidate of pedagogical sciences, chairman of the secretary section of the interbranch problem committee of the Leningrad Oblast Council of Scientific and Technical Societies and the Oblast Division of the RSFSR Pedagogical Society (Leningrad): "An Assistant Manager is Needed"]

[Text] The call to restore the profession of secretary-assistant manager that rang through the pages of *EKO* 7 for 1985 has been supported by many representatives of

this category of workers and managers who are sympathetic with this cause. We received letters from enterprises, organizations, and individual secretaries with requests to help to go through retraining in Leningrad or to invite Leningrad specialists, and to acquire training plans and programs, outlines of lectures, and methodological recommendations published by the only section for methods for teaching secretarial work in the country. The section itself is also receiving hundreds of these letters.

We shall answer everyone at once: increasing the qualifications of secretaries in the city on the Neva has been organized on a public basis and therefore the two secretarial sections cannot accept secretaries from other cities for training or send their specialists to other cities (such business trips are not envisioned in the estimates in the institutions where they work). Unfortunately, they do not have the possibility of providing training materials and methodological recommendations for all who need them.

But the Leningraders are trying to expand the geographical boundaries of their undertaking. In 1987 they are organizing a scientific-practical seminar of unionwide significance and they have obtained permission to conduct 2-week (with leave from production) training sessions of secretary-practical workers, including those from other cities, on the basis of the Leningrad House of Scientific and Technical Propaganda (Footnote 1).

Of course this is a "drop in the bucket." We would like to have more of these drops. There are enthusiasts in Leningrad who have been able to arrange such an important matter. They are prepared to help these enthusiasts from other large industrial centers.

Where does one begin when organizing the increasing of qualifications of secretaries, what difficulties can be encountered and how can they be overcome, toward what should one strive and is there a model for imitation? We asked one of the initiators of the progressive Leningrad undertaking, chairman of the secretary sessions of the interbranch problem committee of the Leningrad Oblast Council of Scientific and Technical Societies and the Oblast Division of the RSFSR Pedagogical Society, Leonid Vasilyevich Vlasov, to answer these questions.

All institutions of Leningrad have secretaries for management workers. Throughout the city and the oblast there are approximately 26,000 staff and "concealed" (Footnote 2) secretaries, including about 12,000 secretaries of top managers. Of these secretaries 82 percent are practical workers trained in stenography and typing courses or in the process of work in institutions, and 18 percent are graduates of 12 Leningrad GPTU's that train secretary-typists and secretary-stenographers (many of them have attended a 34-hour training course in secretarial work).

We began to comprehensively increase the qualifications of practical secretaries during the 1974-1975 school year at one of the Leningrad branch institutes for increasing

the qualifications of management personnel (Footnote 3). We prepared an experimental training plant which included the following subjects: modern requirements for the secretary, arranging and organizing his work place, planning the personal work of the secretary, research, processing, and analysis of information needed by the manager, work with official documents, telephone negotiations, receiving and accommodating visitors, preparing and organizing conferences and business trips for the manager, and business relations between the manager and the secretary. A great deal of assistance was rendered to the developers of the training course by one of the eminent specialists in the area of foreign trade, V. N. Gladkov, who is extremely aware of the fine points and details of secretarial work in Finland and the Scandinavian countries. He personally translated many interesting articles. We also used reference journals of the All-Union Institute of Scientific and Technical Information, "Organization of Management" and "Information Science." All this made it possible to determine the requirements for the organization of secretarial work.

Taking advantage of our experience, in 1977 a senior master of GPTU-90 (now division chief of Glavlenprofbr), N. N. Ryseva, developed and approved an experimental training plan for training secretary-typists with a knowledge of foreign typing. This was the first course in the country to include the subject "secretarial work." And this was already an achievement, in spite of the fact that there was only one hour for secretarial work while there were 72 hours for other disciplines (in foreign secretarial schools the corresponding ratio is 1:16). So far 12 Leningrad GPTU's are graduating qualified typists and stenographers, but no secretaries.

[Boxed item: During 1907-1910 in Petersburg in more than 20 stenographic courses students learned secretarial work along with other subjects. Private secretaries (about 700) and people performing secretarial duties regularly increase their qualifications. The plans and programs of that time have not been preserved, but from the magazines STENOGRAFICHESKIY LISTOK [Stenographic Newsletter], MASHINOPIS [Typing] and BYULLETEN KONTORSHCHIKA [Officeworker Bulletin], we manage to establish that private secretaries had the following requirements:

- to type with a speed of four pages in 60 minutes;
- to take shorthand with a speed of 40-60 words per minute;
- to know at least one foreign language well;
- to work with various correspondents in Russian and foreign languages;
- to master ways of communicating with visitors.

The creation of the Soviet state apparatus, which included secretaries, began after the October Revolution. In keeping with V. I. Lenin's instructions, the Soviet of People's Commissars in a decree of 6 September 1923 ordered institutions conducting work on scientific organization of labor in conjunction with trade unions to

conduct extensive work for increasing the qualifications and retraining various specialists, including secretaries. In implementing this decree the Leningrad Council for Scientific Organization of Labor (later the Northwestern Division of Orgstroy) organized courses for increasing the qualifications of secretaries to management workers. In these classes the secretaries learned to work with official documents, to filter information efficiently and precisely, and to make contact with the workers. In 1926 it was intended to introduce order into secretarial positions, particularly to introduce various categories, improve wages, and create a permanent system for increasing qualifications (Footnote 4). Unfortunately, this activity was never completed.]

Since the end of 1978 in Leningrad in the Central Lecture Hall of the RSFSR Znaniye Society they began comprehensive improvement of the qualifications of secretaries of managers of enterprises, organizations and institutions regardless of their branch jurisdiction. There were 720 students who attended 20 hours of lectures, carried out two practical projects each and two projects for exchanging advanced work experience. The secretaries asked that similar classes be conducted with their managers. We prepared a 4-hour training course called "Organization of Secretarial Labor" for managers of the high and middle levels, we distributed invitations, and we determine the days of the classes. On the day set for the classes we saw...eight managers.

During 1979-1980 we continued to train secretaries. The training plan was expanded to include questions of everyday and casual clothing for a secretary, decorative and therapeutic cosmetics, the art of business speech, the practice of dynamic reading of official documents, and so forth. Qualifications were increased for 1,070 secretaries, including 210 secretaries of top managers.

In 1984 in the Leningrad House of Scientific and Technical Propaganda (LDNTP) a permanent one-day scientific and practical conference for secretaries of managers in Leningrad and the oblast began its work. Classes are conducted once a quarter. Special attention is devoted to the subject matter of the lectures and the selection of instructors. The training course includes: legal substantiation of secretarial labor, control over the execution of personal instructions of the manager, organization of mental labor, the computer literacy of the secretary, and so forth. An experimental training course was prepared and entitled "Computer Literacy of the Secretary" (the role of electronics in the organization of secretarial labor, general information about personal computers, software in the BASIC language, practical utilization of the personal computer in the secretary's work, and so forth). It is very important not to let this promising work die on the root. Unfortunately, the first classes in institutions of Leningrad (on blackboards so far) show the desire of certain teachers to outdo one another in their scientific presentation of their material. In this area it would be good to take advantage of the rich experience of Finland



and the Scandinavian countries where we found devices and methods of communicating with the computer that were convenient for people's understanding (regardless of their level of education).

The Leningrad CPSU Obkom adopted a decision to the effect that the training and increase of qualifications of all secretaries of top managers should be provided and supervised by general division of party raykoms and gorkoms. The first such experiment, which was conducted in January-May 1985 in Dzerzhinskiy Rayon in Leningrad, was approved and recommended for dissemination throughout all rayons of the city and oblast. A training plan for 3- and 4-hour classes was developed and is being used: the role and significance of secretarial labor, modern requirements for the profession and position of "secretary," organization of the mental labor of the secretary, devices and methods of his interaction with the manager, the computer literacy of the secretary, the development of communications skills with the computer and through it—with the computer center for collective use, nondocument and document cycles in the work of the secretary, work with written and oral communications with the workers, and new aspects of secretarial service for managers of firms in the Scandinavian countries.

How can Leningraders help people from other cities who are enthusiastic about this important work?

First it is necessary to create secretarial sections and determine the leaders and composition of the bureaus (3-5 people) and select instructors. We could invite bureau members and instructors to Leningrad and teach them at the LDNTP and subsequently take our "students" under our methodological "tutelage" (supply them with materials, invite them to seminars and conferences, resolve problematic issues).

On whose base would it be desirable to create the secretarial section? On the base of the city (oblast) organization of scientific and technical societies, since it is closest of all to the enterprises and institutions.

Is it necessary to conduct special examinations to reveal the professional level of working secretaries? They can be conducted if the appropriate conditions exist, but it is also possible to use the results of our selective investigation. They have turned out to be exceptionally useful in Leningrad in creating sections for teaching methods for secretarial work and developing a program for comprehensively increasing the qualifications of working secretaries.

It turned out that secretaries 47 years of age and older (we shall conventionally call them "prestigious"), while having a low educational level, occupy high positions (judging from the positions of their managers) and receive salaries of up to 200 rubles. They have a great deal of experience in organizing labor but, strange as it may be, they lack knowledge of the basics of secretarial

activity. They do not strive to independently increase their qualifications, referring to their personal experience and intuition, and they have complete faith in their thoughtless work and their managers' complete confidence in them. Workers of the second age group (24-47) who are called "active," have higher, incomplete higher, and secondary specialized education and strive constantly to augment their knowledge and improve their abilities. Their salaries (even in the "concealed" variant) do not exceed 130 rubles. They do not enjoy the same confidence of their managers as the "prestigious" ones do. The "passive" secretaries (19-25 years) are used mainly as personal typists, telephone receptionists and errand boys and they receive 70-95 rubles a month. They consider their labor nonprestigious (except for GPTU graduates) but nonetheless they are interested in innovations in secretarial activity.

We began creating our section on methods of teaching secretarial work by sending prospective members information letters which formulated the goals and tasks. Only 42 percent responded. The inertia had its effect. Many decided to wait until their more active colleagues had responded. Taking this psychological factor into account we began to carefully prepare the classes and we devoted special attention to the selection of instructors and the quality of the lecture material. From 40 to 230 people attended the classes and therefore individual training is practically impossible. Frequently it was necessary to balance on the brink of breaking psychological contacts. This greatly fatigues the instructors and not everybody is capable of sustaining the attention of a large audience.

Analyzing the merits and shortcomings of the classes that were conducted, we came to the conclusion that if one does not take into account the age (from 19 to 62) or the level of knowledge of the students, one can "saturate them with communication." Then they lead the classes of their own accord. It is also necessary to take into account that women frequently transfer the individual qualities of the instructor over to the content of the lecture. It is good if he is familiar with the audience or handles it skillfully. In this case social symbolism develops: the lecturer is like a symbol and not only the information itself is important to the students, but above all the fact that it is coming from the mouth of a given person. The evaluation of the personality of the instructor by the audience of secretaries has an essential influence on the results. They have more faith in a scholar than in a newcomer. The instructor who gives the course emotionally has a stronger effect on the women in the audience than the one who presents similar thoughts in a dry and indifferent way. The students in the secretarial groups ask that the instructors present the training material in a more interesting way, using concrete examples. Our observations showed that secretaries 19-30 years of age are interested in the external aspects of the lectures, and the older ones—in the ability of the lecturer to compress and generalize material, referring to practice. In women's groups it is important not only to



present the facts, ideas, and experience, but also to always express one's attitude toward them. We established that secretaries 19-35 years of age are frequently indifferent to whose material is presented by the instructor (his own or from a book), but the older group requires clear details and explanations.

Women's training collectives react sharply to the fact that the instructor brings up situations with which they are familiar in their work. The lecturer's mastery consists in that the subject of the class is well assimilated without repetition of that with which the students are well aware from their own experience and preceding lectures. The majority of secretaries retain the training information fairly quickly and manage to think about it and recall it in detail. This is clear from the questions of the students and the detailed discussions of the instructors at the end of the classes.

In the training groups, especially among the "prestigious" secretaries, one encounters skeptics who, because of the job position of their manager and, apparently, in imitation of him, have an ironic attitude even toward information with which they are not very familiar. Through their behavior, expression, and bearing, they express the idea: "They think they're going to teach me something..." Every group has a "know-it-all" who during breaks and at the end of the classes begin with the enigmatic phrase: "Well, when we hired the chief of the main administration, he said: 'This category of people requires constant attention from the instructor and his ability at the necessary moment to give good advice to the know-it-all and thus reinforce the interest of the audience in the subject under consideration.'

Taking account of all of the aforementioned factors helped us to increase the effectiveness of the acquisition of training information by the secretaries. But we were certainly not satisfied with everything and we are constantly looking for new ways, devices, and methods. We are studying domestic and foreign experience, particularly in Finland. Invaluable assistance is constantly being granted to us in this by the Leningrad Chamber of Commerce, the Finnish-Soviet Chamber of Commerce in Leningrad, and the Lenfintorg Foreign Trade Association.

Why did we begin to study the extremes of Finland and not of other countries? A comparative analysis of the organization and quality of secretarial labor in Western Europe, the United States and Japan, which we conducted in 1983-1985, showed that at the end of this period Finland was at the highest level in this area, having adopted all that was best and most advanced in the world. This, incidentally, is confirmed also by the results of the Conference of Finnish Secretaries in Espoo, and also the jubilee publication of the Society of Finnish Secretaries. Joint stock companies and firms of Finland are constantly looking for new forms of management, including improvement of secretarial labor. It is thought that here there are immense, not completely revealed, possibilities of increasing the effectiveness of the labor of

managers. Today one can see a clear orientation (through training, work and improvement of qualifications) toward rapid restructuring of the organization of the labor of Finnish secretaries, depending on the condition of the country's economy.

The requirements placed on secretaries in Finland are interesting (in the order of their significance): A great deal of practical experience and a high level of professionalism, the ability to communicate with computers, the ability to work with automated office equipment and dictaphone systems, knowledge of several foreign languages and the entire complex of business communication, the ability to work with all kinds of official documents, and so forth. Secretaries take a state exam for the title "professional secretary." Thus they select capable people who are able to think rationally, make these decisions independently, and handle managerial interrelations well. Secretarial schools, unfortunately, do not always devote the proper attention to this. Finnish secretaries, as leaders of the country's secretarial societies note, have become highly skilled assistants to managers. They are capable of taking responsibility without direct instructions, of taking initiative, and of making decisions within the limits of their competence.

In Finland there are two large societies of secretaries. In November 1985 the first was 25 years old and the second—15. Each of them has more than 1,000 members and there is a certain "crossover" in membership. The "old" society is a member of the International Association of Secretaries and follows its recommendations and participates in congresses and competitions. The "young" society is made up basically of graduates of the Helsinki Secretarial School. Both societies have sections in various cities of the country. They have accumulated a large amount of practical experience in continuously raising the professional level of working secretaries. The exchange of advanced secretarial experience is well-organized, especially for secretaries of high-level management of enterprises, organizations, and banks.

Both secretarial societies conduct a large amount of organizational-methodological work and resolve conflict situations in the work places of secretaries, which involves their continuous changing duties and the rapid penetration of electronics into secretarial offices. Recently the "young" secretarial society conducted a campaign that recommended to enterprises, organizations, and banks that they not confuse secretaries with typists, stenographers, and errand boys; that they not hire people promising the job of secretary and giving them the functions of an ordinary employee. They organize the celebration of International Secretaries Day (25 October). A person can become a member of any secretarial society of Finland by obtaining two recommendations from senior members of the society and having worked no less than 3 years in the position of secretary to a manager.

The list of tasks for which secretaries bear personal responsibility prepared by the secretarial societies is interesting. Work with incoming correspondence, the transfer of it to a report for the manager, responses to individual letters, screening telephone calls, contact on behalf of the manager, reserving time for visitors, receiving visitors for the manager, performing functions of "hostess" at various measures, preparing materials for the manager in their native and foreign languages, translations, storage of documents for the manager, control over the fulfillment of decisions made by the manager, preparation and organization of conferences, information measures, internal holidays of the enterprises, congratulations and condolences on behalf of the manager, contacts with banks, authorities and organizations on behalf of the manager, work with statistics, preparation of business trips for the manager, and so forth.

The Leningrad secretarial sections are planning to establish business contacts with the societies of Finnish secretaries. But there are difficulties here and it would be possible to eliminate them more efficiently if an all-union professional society of secretaries with the corresponding authority and staffs were created in Moscow. It would be a guardian and mentor for the 2.5 million workers in this category. So far the immense efforts of the person so enthusiastic about organizing a secretarial section in Moscow, Ya. Kazhdan, have, unfortunately, not ended in success. "One would think that everyone would be interested in secretaries, but everyone means nobody!" (Footnote 6) It is probably time to change the attitude toward secretaries and raise the significance and prestige of this profession.

#### Footnotes

1. Address of the Leningrad House of Scientific and Technical Propaganda: 191001, Leningrad, Nevskiy Prospekt, 59, T2104508, referent Nina Georgiyevna Abezgauz.

2. "Concealed" secretaries are specialists who perform purely secretarial functions but for purposes of salary increases are included among engineers and other positions. This is explained by the fact that the salaries of staff secretaries in the USSR are the lowest among the CEMA countries.

3. Viktorov, A., "Secrets of the Profession," *Izvestiya* 13 December 1974 (Moscow Evening Edition).

4. *TEKHNIKA UPRAVLENIYA*, No 9, 1926, p 45.

5. The section for organizing secretarial labor of the interbranch problem committee of the Leningrad Oblast Council of Scientific and Technical Societies has been in operation since 1985.

6. Yepifanov, Ye., "The Secretary to the Director," *NEDELYA*, No 36, 1985 (2-8 September).

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#### Writer Views Economic Life: Part II

18200005k Novosibirsk *EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO)* in Russian No 8, Aug 87  
pp 155-185

[Continuation of story begun in EKO 7, 1987 by Georgiy Kulishkin: "Closer to the Ruble"]

#### 5.

"Well, and what has been stolen? Yes, stolen. Shoe trees, leather, this machine. Everyone learned on stolen equipment. And we are working on stolen equipment, and hiding in the corners."

"Well, maybe that is not necessary?..."

"What do you mean, do you not want to learn anything new?"

"I do! But we will get caught and you will get into trouble. It is better to go somewhere where one can learn legally...."

"And where is that—where you can learn legally?"

"I do not know. But there must be somewhere."

"Well calm down, there is no such place where they could teach you to sew something new from the cutting to the finishing. Fedya and I would not teach you—nobody would teach you."

They lock themselves in the dressing room. Sergey has brought from home a machine for semifinished pieces and Fedor Ivanovich—the necessary instruments. The teachers disagree, right down to the point of quarreling. They spend 2 or 3 hours a day with Dmitriy. Either both of them or just one, but persistently.

Pair after pair come from them with strict regularity: shoes for Dmitriy, sandals for Fedor Ivanovich, summer shoes for Sergey—and for Nastenka, Dmitriy's training is like manna from heaven. She receives high-heeled sandals with a low platform, and slippers, and boots, and shoes to wear with jeans. And all of them come from pictures in the catalogue. She comes into the dressing room and people will be changing clothes and not notice her. She flatters and praises Dmitriy, starts spreading glue on the parts, and she also cleans up, letting no one take her broom away from her.

"The muse of the young shoemaker!" Sergey teases her.

"But I can also inspire older people!..."

Fedor Ivanovich's strong point is old devices—shoes with stitched welts, a block heel made of leather. Dmitriy is more attracted to what Sergey can do. He uses modern technology and it is all elegant. There is no picture in the catalogue which Sergey cannot replicate precisely in his prepared footwear.

"Your hands...." Dmitriy said once.

"Hands—yes. But nowhere to put them to use."

"What do you mean?" Dmitriy does not believe him.

"Well. There Nastenka is looking through a magazine and pointing with her finger—I want these. Will they make them for her?"

"They will not, where would such masters come from!"

"Masters? What about me? What about Fedor Ivanovich? And we are teaching you under the table?! There cannot but be masters of that which the people need. That would be against nature."

"But why?..."

"Dimych, they will not let us work. They have choked out the trade. Fedor was quietly pounding away at home, as we say jokingly, he had covered his hammer with cotton...and he received 2 years in jail. He is a good man, and he will not repent. But if they catch him he will go back to jail."

"No, wait," Dmitriy becomes agitated. "In your opinion, is it not necessary to obey the laws?"

"In my opinion the law should purify life and not poison it. Where is the law whereby I could sew footwear in keeping with my ability and in keeping with that which the people need? Where is the place where I could do this? There is no such place in our city. I doubt that there is one in the country."

"Stop!" Dmitriy waves his hands with conviction.

"Do not wave your hand at me, you little snot!" Sergey rips off his apron. "Take a whiff of life from the beginning! Where am I to work, where?! Is there a crowd waiting to get individual sewing from set models? Faster, faster and you get more under the table, and take the work to the bazaar on your day off—right? I have worked, and I have tried. I have even worked in the oblast consumer services laboratory. New models, samples for display!... A smoke screen! They put me in the harness to provide footwear for influential aunts and uncles. For the ugly people. And how instructive it was for me to work in the central office preparing circus programs! A living fable with a moral! Do you want to hear? Listen. For the first few weeks I was happy, like a fool. With each pair I did something tricky—like a clown or a tightrope walker. For each one I would think of

something and dress it up like toys. Among the circus performers there were whispers: "A master! He can do anything." I was in seventh heaven. It was a tiny little shop—I brought my own finishing machine, a machine for semi-manufactured pieces, and I bought some heels, nails, glue, and a little bit of leather. I did not think about money, this had nothing to do with money. When I would look I would see that there were strange changes in the line waiting for me. I had measured artists for a long time, their order was in the plan, but they gave me a command: Stop. The shop chief would come up to me and tell me to make a pair of sandals for Mama Ira. I made them. She liked them. Make some light shoes for this important person, some regular shoes for our director, something suitable for his wife, for my husband, for our head bookkeeper.... My patroness, Mama Ira, was surrounded by everything imaginable—perfumes, foreign toys, but for me—what does a shoemaker need?—they could interest me with a bottle. My rapture subsided. I counted my money—I was spending more than I was earning. I went to the director: I told him that I needed real wages and that I did not want people to buy things for me. He himself was a home boy! He took out his pencil and drew something for me, like for a child: Here, he said, am I, the head engineer, our secretary, the head bookkeeper and four bookkeepers, the design division—20 people, the head technologist with three subordinates, the legal expert, four clever supply people, the personnel girls, eight janitors, the chief Mama Ira, the accountant Mama Sveta, the warehousemen, the artists, I cannot recall who else.... And this entire fraternity is supported by a dozen seamstresses and I, an ordinary mortal. He went on with his pencil: for a pair of shoes we get at most 70 rubles—for light shoes. After the cost of the material and the wages for the management workers, nothing is left for your wages. There is no way to get any more. They say, well you do a little something on the sly for your clients and we will close our eyes.... Good uncle! If you want him to, he will close his eyes, if you want him to he will open them. I am one of his bureaucrats, I do not need wages, there is nothing I need to buy. Idyllic! I took the pencil and on the same piece of paper I drew. Let us assume, I said, that all of these from the director to the janitor were taken by the ear out of this bright building and strictly forbidden to come in here. Let us say that they give the building to people for housing and leave only the sewing shop and my little corner. I would not take 70 rubles from the state for sandals for an artist, no. All I would need would be 35—for materials and for my own wages. And from these 35 rubles I would give the state 200 a month in taxes—just as any honorable working person should. But? The variant? And no under-the-counter work.

"And what did he say?" Dmitriy breaks out.

"He commiserated with me, saying that this would never happen. You understand, he was so confident that this would never happen that he could sincerely be sorry that such parasites as he would never be driven away from the feeding trough! Then I decided to load them with

work. Let them perform at least their own modest duties, without pushing everything off on me. I got a paper from the secretary and signed a statement that I could not start to fill an order because I did not have such-and-such and such-and-such and such-and-such. I went to my little room and sat there for a day. The next day I took a book with me and sat there and read. A week passed and I still sat there. The suppliers delivered a few things, but half is as good as nothing. I sat there. He called me in. And so transparently: He said I should not abuse his setup because if he became angry...I silently changed clothes, traveled through three stops on the streetcar—to the raykom. By evening all the suppliers had a reprimand. But the goods do not fall from the sky, and they had neither the habits nor the funds for delivering them. There was no pipe, the lecture and display room was lacking equipment, plywood had to be delivered so that the director's flunkies could somehow set up visual aids on the kolkhozes—let them go ahead. But nails, thread, and heels—these are contemptible minutiae for them! I sat and sat and became bored. Again I went to the raykom. A disgrace! We will send a representative and figure this out! They convened to figure it out. Sitting next to one another were nine representatives of the elite with diplomas, and they were in a militant mood. Sitting at his desk the director was holding a court of arbitration. And on the side—a representative. Parasites among themselves: they have worked so many years, and now it has turned up, it is beginning!... I asked—who has been working? You have been working?! And there was an indignant murmur: What makes him think he can talk like that? And louder than all the rest was the chief of the design division. I am in favor of him: What, I ask, are you doing that is useful for the manufacture of footwear? That, he said, is not within your competence—to ask me such questions. It is not? And do you not receive your wages from my work? You should have seen the scorn with which he said: "We do not take a kopeck from you!" From whom then? From whom?! "The breadwinner!" shouted the technologist. I sympathized with him: But you, from what do you receive money? "We manufacture your unique footwear!" "You manufacture?" "We carry out developments!" "You carry them out? Do you make soles out of heel taps? You do not make distinction!" "What is he saying! It is a disgrace! Shut him up!" And the technologist: "I do not work in your private store, but I have been working here for 8 years, and you have only been here a couple of weeks!" And he darted out of the office, slamming the door! Representative: "You really could conduct yourself more properly...." "With whom—more properly?!" "Well, here, again. Do not take on any more than you have to. The comrades are in the service. They have made mistakes in their work. We will punish them. But why act as though you feed all of them...."

"I had gotten started, Dimych.... I could not sleep at night—I could not stop thinking about that bunch of do-nothings. I would fill up sheets of paper. We are lucky to have somewhere to send our gripes in written form. But I would write somewhere and they would answer me

here. Your working brother—and he is not healthy. Well—liar! My every step left a trace, they confiscated my tools, they gave me a receipt for my machine. All right. I sat there. But then the commission came from the capital, the direct superiors of my superior. Impressive men and educated. They thanked me, they gave the directors a reprimand, and they eliminated the footwear section. Because of the impossibility of providing for rhythmic operation. That is, I was being kicked out. I went wild. This meant that they would stay and I, the one who was doing the work, would be sent away? I wrote and wrote. I wrote everywhere! Commission after commission. But nobody was in a hurry to do anything, they said it was a serious issue, that it could not be resolved simply. A half year passed. I joined the ranks of the do-nothings. A conversation would barely start and immediately they would ask: are you working? Oh, you are not working.... But a man must eat. And throughout the city I had the reputation of someone who wrote letters, an informer.... But I gained strength and stood my ground. I succeeded. They got rid of the director, they transferred him. They restored the footwear section and the new director quickly hired two old-timers, which made its way back to me. They were both drunkards and bunglers, but they kept their mouths shut. And that is it. There is no place for me. There are my hands for you!"

Listening to all this, Dmitriy has stopped work long ago and sits with his hands folded on his apron hanging between his knees.

"You have been doing a lot of talking here...." Sergey says in a subdued voice. "You watch out, do not take it into your head to cool off towards your work! Our craft is not very attractive, but think it is both the most ancient one and it is eternal. An original pair of shoes, put together with talent, will always be valued, always: foolishness will pass and life will take what it will. The main thing for us is the ability to save!"

## 6.

"We should have another rush worker...the season is moving on. We will be buried in work." Sergey's face becomes gloomy, and here Fedor Ivanovich breaks in:

"Well, yes, Dimych. You should transfer over to us."

"And what would they say in the shop?" asks Dmitriy, as if castigating them.

"Your work is not that important, they would give an order and you would be transferred."

"Aha, an order! They have experience, they have a family, but the rush work would go to me?"

"But if...." Fedor Ivanovich begins to whisper in Sergey's ear.

And Kolyunya becomes the rush worker. And Dmitriy is trained by him. Rush work...is it a joke to work with the shoes of a person who out of curiosity or because he has nothing better to do, checks on your every movement?! And receives money?...

But next to Kolyunya, any difficulty is only a half-difficulty.

"How do we work?" asks Kolyunya. "In a common pot?"

"A common one!" Dmitriy answers, exulting.

The shop follows them in envious silence.

"Are you such people?" Kolyunya stops. "Just think: if you got a bit of money would you forget who your friends are?"

With the rush work the first thing he does is to gather the orders, place them in a pile and run to the shop to give the under-the-counter work to his friends. Having received their money for this work from the clients, Kolyunya stealthily, for only Dmitriy can see, slaps his pocket and triumphantly smacks his lips—and he is happy for his comrades and he does not forget about himself.

"Life proceeds, it rolls along," he comes out with a new piece of wisdom. "He who hesitates is lost! Right?" He turns to Fedor Ivanovich for support. "It is as though we live on a volcano, an eternal experiment. Tomorrow—bang!—and we will not be doing rush work. Remember then and lick your lips!..."

Kolyunya remembers everything, and manages to get everything done—he works as much as Dmitriy does, and runs to the shop, and gives orders. And then he will also go into the dressing room. There in a cabinet he has some vodka. Kolyunya runs in, takes a sip and gets tight. But he soon leaves. And when he comes in again, he drinks a little more. And the drunker he gets, the more courteous he is to the client and the less restraint he shows in prices. Something he sews in the morning for 50 kopecks can be repaired after dinner for 2 rubles.

September moves in, a peak time, when people remember about their fall footwear and as though they are on a team, they bring their repairs in all at one time. The shop runs itself. As though everyone were hungry. And everyone is like Kolyunya. Faster and faster! Dmitriy tears off a heel, Kolyunya in the blink of an eye takes 3-5 nails and fastens on a new one, and Dmitriy, by a method borrowed from Yanchik, with one move cuts it so clean that it does not even have to be polished. Ready! Kolyunya's dazzling smile—and his inflated pocket swallow up money. Next!

With neighbors like this you will not get cold when you are at work. Fedor Ivanovich and Fon-Petya forget about their cigarette breaks. Painfully envious, Fon-Petya loses his own hammer in the bustle, and he twitches and jerks as though he has been attacked by mosquitoes. And Kolyunya takes shoes from a client right out from under his nose and with a jump disappears into the shop.

"Heel taps, clean!" he shouts, already from a distance. "Who needs them? Soles with taps! Three rubles and 20 minutes of your time!"

They do not take the finished shoes out of the shop—they throw them out and save a couple of seconds. Dmitriy jumps to pick them up. He picks them up and gives them to Kolyunya. He smiles into the eyes of the client and puts the money in his pocket. Next!

Yanchik and Uncle Seva have stripped down to their T-shirts, and they wipe the sweat away with dirty towels. The hammers bang and scraps fly away from the rapid scissors. Uncle Seva, losing strength, is drawn to the bottle, which is hidden right here, under his bench. He swallows and, turning his head, goes back to work. Bottle—work, bottle—work! By the end of the day he has drunk so much that his mind is foggy. But half-naked, completely covered with sweat, with saliva sliding out of the corners of his mouth, he has plunged into the rush work.

"Kolyunya!" he shouts wildly, and with a gesture of a conqueror waves his drunken hand in the direction of the line. "Rob them, the goats!!!"

The line moves, Uncle Seva steps toward it with bulging red eyes.

"Rob them, I said! All of them!"

Fedor Ivanovich and after him Dmitriy and Kolyunya try to drag Uncle Seva away. He hisses and growls and grabs hold of the machine for finishing operations.

"But I saaiid!!! All without discrimination! Aaaaall!!!"

"No, you cannot deceive vodka!" Kolyunya philosophizes then. After a half-day he also begins to give way. From time to time he elegantly folds his hands and drops his head on them. With his leg sticking out to the side, he looks at that time like a dying swan. This is what he says: "I am turning into a swan!"

Having dozed about 10 minutes, he straightens up and in a cheerful voice asks the next person in line:

"What can I do for you?"

And he smiles with fresh eyes. He smiles in various ways, Kolyunya's assortment of smiles is inexhaustible because he himself is a keen psychologist. He can smell a bad

client a mile away. And having picked up his scent he begins to maneuver. He resorts to any trickery just so long as he and Dmitriy do not end up with the client.

Fon-Petya responds to trickery with trickery. He discovers the most unexpected ruses. Seeming to have lost completely, left with the "questionable" client, he can get up and, courteously excusing himself, go to the lavatory. Having been beaten several times in a row, Kolyunya exerts himself and invents a countermove.

"You are not in too much of a hurry?" he kindly asks a woman with squeamishly pursed lips. "No? Then I advise you to wait for the master, who just left. Nobody does better work than he does. Nobody! What do you say—do you want to do this? Yes, he has such a clientele...but here is what you tell him—tell him that Larisa Zinovyevna sent you. And that you will not entrust your order to anyone else. And he will like that."

Intoxicated by the flattery, Fon-Petya looks down condescendingly on his colleague. Kolyunya drops his eyes modestly: that is it, Fon-Petya has been beaten.

A conspiracy begins: "From Irina Markovna, from Ilya Borisovich...." Kolyunya palms off 15 or so clients on him, no more. But these will bring acquaintances, and they will bring theirs. In a couple of days Fon-Petya has acquired immense popularity. They begin to form a separate line for him, consisting of people who are talkative, picky about quality, and tight with their money, those who after their second or third appearance in the shop begin to be capricious, speculating already about their own constancy.

As a youth Fon-Petya studied in the conservatory. Life has not put him on the stage, and Fon-Petya through his external appearance and manners punctiliously emphasizes that he is not simply a shoemaker. Education is his favorite thing. But it must be demonstrated, and this takes time—the time during which the people sitting next to you are making money.... This is why Fon-Petya is so harried and the attitude of a sadist always shows through his politeness.

"Petenka!" The word ingratiatingly, sweetly slips down from above, from the counter. "How are you? How is your wife? The kids? I hope everything is going all right! I brought a relative to see you. Imagine, he could not find anywhere that would repair training shoes for children. And I said—Petenka will do it. Nobody else would do it, but he will do it! Petenka, just a couple of stitches here and on the sole—you see—she was asking for nothing."

"Hmm," Fon-Petya intends to give the appearance that he sincerely wants to help. "But where will we put the thread? Leave it on top?—two steps and it would be gone."

"But if you start on top and then put a thin insole?"

"Perhaps," Fon-Petya agrees treacherously. "Give it to the receiving clerk and they will do it for you."

"But what about you, Petenka?"

"We do not put on soles in the rush work section."

"But you, can we not change your mind? Go ahead and put on the little sole, so that the child can get around the room."

Fon-Petya, wheezing, takes up a hook. With his thick fingers it is difficult to get hold of the tiny shoe, and he pricks himself like a student and does not want to notice that the upper part of the shoe came apart long ago at all the seams—there was no mention of this and there will be none.

"Thank you so very much, Petenka! This is a real master! Petenka, but could you not put a couple of more stitches here? The rest of them are all right, but here a little part is sticking out."

Fon-Petya is now whistling while he is wheezing: Kolyunya is taking his fourth customer and here he is having conversations and work for which he is getting no money. He sews it. Gives it back. And the gracious old man turns the little shoe around in his hand and picks out the old threads from the seams that have come apart.

"You understand," Fon-Petya says, himself pleading to grant a new request. "There is no point in fiddling with it, the sole will rip off immediately anyway."

"Yes, yes, you are such a specialist that you are, of course, right. But perhaps just this little seam?"

Fon-Petya glares at the old man and, having decided that it will be easier to do it than to squabble, again takes up a hook. And he sews it. And he puts it firmly on the counter. But the old man does not leave. He does not like to ask, but, after all, Petenka is an educated person and he will understand.... Oh, Fon-Petya understands him quite well. That is why he is so deliberate in going to the next client. The old man moves to the side, but not in order to leave. No, he will wait until the master is free, he is in no hurry.

Just the presence of the old man causes Fon-Petya's hands to tremble.

"Eeek!" he cries, grasping the surplus part of the heel with his knife. He cries out as though he has cut himself.

"Whaat?" Kolyunya becomes concerned in a malicious way.

"You get out of here!"

Kolyunya inspects it as if it is a test.

"Ready!" he says to Dmitriy.

"Don't you dare!" Fon-Petya shouts. "Don't you dare concerning me!..."

"What do you think you are doing?!" the old man also attacks Kolyunya. "Petenka," he begins to calm him down. "Do not pay any attention, there are plenty of envious people everywhere! I am just asking if you could not sew a little bit more in this little place?..."

"Get out of here!" Fon-Petya whispers. "Out of here!" he shouts in a baritone which he developed in his years at the conservatory. "Out of here!!!" he shouts and cannot stop himself.

But competition is competition and there are issues which take precedence, regardless of any dissension. The first is how much to give to Sergey.

Fon-Petya is quiet, but now he asks:

"Boys, do not make me look bad to Sergey, do not give him a lot. Twenty-four plus change—what shall I give him? About 9 rubles? Or 8? Is 7 not too little?..."

Fedor Ivanovich:

"I have 31. To make it even I will give him 11."

Dmitriy has to be silent, Kolyunya knows better how to deal with this.

"Look!" Kolyunya says to Fedor Ivanovich with excitement. "We shall go ruble for ruble! But Dimych and I, from the two of us 25 kopecks to Sergey. But I spent a lot of time in the shop, and from that Sergey should get 15 rubles."

But nobody has any intention of giving Sergey 15 rubles, and nobody will give what has been agreed upon out of his own good will. Sergey knows this, and they know it. But they maintain the appearance of trust, of "business-like" order. Dmitriy does not catch on to this immediately.

"And your conscience?..." he stammers.

"Whaaat?" Kolyunya responds irreconcilably in advance.

Fon-Petya hits him at his weakest spot: "Are you not a helper?..."

"As you like," Dmitriy bursts out. "But I will give my part honestly!"

"What part—is yours?" Kolyunya wants to clarify this. "And what is mine?"

"That is your business."

"Mine?—And not—yours? You bring in two 10-ruble notes and we are supposed to be equal? You are such a great master that you get twice as much of what is ours?"

"That's it," Fedor Ivanovich embraces Dmitriy. "Stick up for your friends. As long as you are with us we are your friends, and you will end up in Sergey's office and other people will bring money to you."

Dmitriy backs down. But he still disagrees.

"What kind of honor should there be?..." he says, confused, when he is alone with Kolyunya.

"Honor?" Kolyunya looks at him ironically. "And they take half away from us—is that honorable?"

Dmitriy answers, but not immediately:

"Correct. We are stealing—what honor can there be? I am a snot-nosed kid and during a day I sometimes pocket half as much as my grandmother gets for a pension. Is that honorable?"

"And would it be honorable for your grandmother and you to receive this pension?" Kolyunya asks maliciously.

And again Dmitriy falls into thought. In school with him there were students who were no better and no worse, but they did not recognize Dmitriy as an equal—because of his clothing, because of his pocket money, because of many other things that they had and he did not. It was especially difficult with people in his own class whose parents had money. They did not think like he did and their plans for the future were quite different from the ones Dmitriy could dream of. But he was not envious. And when Kolyunya asks now—is that fair?—he feels keenly that it is not.

## 7.

With a single glance, Nastenka drives a chap in construction overalls out of the soft swivel chair, gets up on her knees on the chair, and leaning her belly on the counter, straining in the direction of the back room—says in a musical voice:

"Hello!"

Fon-Petya sits up, assumes a dignified air, and straightens out his hair and mustache. Unable to wink, Fedor Ivanovich, when greeting her joyously squints with both his eyes. Even Kolyunya takes his head out of his hands. He even opens his eyes, which are streaked with red because of the vodka.

"Daughter!" he pronounced with saliva running out of his mouth, and again assumes the pose of a swan. Kolyunya has been drinking for 4 days like he was crazy. It is as though he is afraid to sober up.

As if for convenience, Nastenka spreads out her pink jacket with its puffed shoulders and bends over, and one could see through her transparent T-shirt.

Dmitriy becomes jealous and grouchy. Angrily, but enchantedly looking sideways at Nastenka, he asks a girl from the line:

"What would you...." he does not stutter, the hesitation takes place in his mind, but his voice says:

"...What would you like?"

He is given some fairly worn-out shoes by Ira Gavryushina, his unrequited schoolboy love.

Ira smiles, but this is a reflex in response to a familiar face she has seen before. But in her eyes she is dumbfounded and confused. It was quite natural to give the shoes she has taken from her feet to a shoemaker, but if he suddenly turns out to be someone in your class....

"So what would you like, young lady?" Dmitriy repeats jokingly.

"Heels," Ira says in a strange voice.

"That is possible!" Dmitriy winks, encouraging her.

The heels are quite worn and Dmitriy goes up to the machine to even them off. The plastic will not grind down—it becomes sticky and turns into liquid. The crumbling material, hanging on the heel, comes apart under his fingers. And the seconds flow by stickily. Dmitriy is stuck with a sticky feeling that is new to him. Is he really ashamed of his work? Why? After all, he enjoys doing it and has an aptitude for it. And people need him: there are waiting lines for weeks! But this shock, which Ira took so long to recover from.... "So prim and proper..."—suddenly he feels a strong aversion to her and, at the same time, toward himself, because he is hanging around the machine unable to screw up the courage to look her straight in the eye. "No, I did not rob her in the end!" Dmitriy scolds himself.

"Is there anything left of the heels there?" Ira greets him cheerfully. She has already regained her composure.

"A little bit," Dmitriy also smiles. Spreading glue over the shoe and the heel, he asks:

"What are you doing now?"

"I am in medical school. And you?" Ira asks out of habit.

Nastenka checks out her face critically.

"I am working here," says Dmitriy.

"Dimych," Sergey comes out, always guessing when Nastenka shows up. "Be a friend and tell me where you find such girls!"

Obviously not wanting to leave any of the compliment for Ira, Nastenka leans forward, showing herself even more enchantingly, and says:

"In the same place where you find yours, comrade chief!"

Sticking his nose in her hair, Sergey whispers something. Like an interpreter, she says it out loud, sentence after sentence:

"Dim, we are being invited to the sauna. They say it has soft furniture, TV...what? What what?..."

Ira, in order to demonstrate that she is not a part of all this, opens up her purse to look for something in it.

"Done!" Dmitriy shows her the repaired shoes.

"How much do I owe you?..." How carefully she has prepared for this question!

"Forget about it!" Dmitriy scolds her.

"Dim, the sauna tomorrow. What are we doing tomorrow?"

"Listen, work is work," says Ira. "Do not put me in an awkward position!"

"Stop!"

"All right, I will stop. Thank you!"

"That is a different matter. That—so much, so much!"

"But if that is the way it is, I will not come to you for repairs any more."

"There is no need for that!" says Dmitriy, although he knows that he will be grateful to her if she does not come back again.

"I am late!" Ira breaks in. "I have to run."

"Aha," Dmitriy lets her go. "Drop in again."

Nastenka follows her with a heavy gaze:

"Who is that rat?"

"You yourself are the rat! I went to school with her."

"Oh, well, let her live."



Kolyunya slowly, like a sack containing something heavy and soft, begins to flop to the side. Kolyunya catches him by the scruff of the neck and shakes him:

"Let us go into the dressing room, wake up!"

Kolyunya, holding onto the wooden frame of the chair so as not to fall in a heap, indignantly starts to wheeze. Then he bends over and looks around under the bench for a lacquered boot on which he is to replace the fastener. Sticking the knife under the threads of the seam, from time to time he rolls his head. Dmitriy forcefully takes away the shoe and fixes the "zipper" himself. Kolyunya turns his colorless eyes toward him and does not shout but produced a metallic sound with his teeth. And suddenly, as if he has stolen it, he grabs the shoe that Dmitriy has set down, and turning around, almost falling, runs to the sleeve machine. There he stitches in a piping, returns, flops on the chair and sits with his eyes bulging out as he passes his finger along the waves caused by the fastener, which was sewn in crooked.

"Did you fix it?" Dmitriy says with irritation.

Kolyunya clicks his teeth and takes from the stove a red-hot iron which he places on the wrinkles.

"Hey—hey! Careful!" shouts Dmitriy.

Kolyunya turns the hot iron toward himself, and spits on it. The sparks fly.

"Mmmm," says Kolyunya in Dmitriy's direction, which means: See, everything is all right. And gritting his teeth from effort, he smooths out one of the wrinkles. The lacquer gives off a white smoke—Kolyunya pulls back his hand. A hot brown dry cinder sits on his boottop. The courage leaves Kolyunya's eyes just as quickly as the smoke from the lacquer film dissolved in the air.

"A burn?" Dmitriy asks.

Kolyunya nods his head in the affirmative. Then he throws his head back and screams:

"Why does everything happen to me? Why?!"

And throwing the shoe into the corner where the finishing machine stands, he limps heavily into the shop.

"Did you see all that?" Sergey asks Nastenka. "Can anyone live here long unless tension is released? Into the sauna, and no discussion!"

Soon Rita walks up to Dmitriy and whispers:

"Kolya is crying in the dressing room. He is crying so hard that I am afraid to approach him!"

"Kolya! Kolya!" Dmitriy shouts. "Stop it! It is not worth it! We will return the money to the lady—and that will be it."

Kolyunya sobs, pressing his face into a curtain on which Yanchik sometimes wipes his not completely clean hands during breaks.

"What for?" he shouts through the dusty fabric. "What did I do to her?"

"Kolya, now stop it!"

"Can I abandon her? Can I abandon my son? Yes? My apartment that is now lived in? Abandon it? For what will she survive me? What a damn fool I am, whom nobody needs!"

Dmitriy raises his hands but he does not touch his teacher, he does not dare. Kolyunya's bent spine shudders, his thin shoulder blades tremble like clipped wings under his velveteen shirt, and his canvas apron strings hang around his neck and it seems that here is the burden that is bending Kolyunya over.

Having cried himself out, his face contorted, he turns to Dmitriy.

"Well, I was unnecessary—and she would tell you that right away. But no—she milked me! You make investments; you have no days off, you think—for the sake of the family, so you will have a home, and at home...what for, Dim? Or am I not really a person any more? Tell me!"

He sobs sporadically, wiping his eyes with his fists like a child.

"For years she was preparing: the apartment is hers, she gave all her money to her mother. She says that I would steal it, and Mama is more reliable.... And my son?... How am I supposed to live?! They say that I can give her a thousand rubles for compensation and then they will not divide up the property. Well?"

"Kolya, you are becoming overtired! You have such women—in the store, in the barber shop. We will find you such a wife! You got rid of her—be glad: nobody can take your hands away, and with your hands...."

"Heh, heh, heh...."—Kolyunya brokenly continues. "I can earn money. There is no need to know for whom. And so...but why? For booze?"

"Stop, you will find out for whom! Let us go, a client is sitting out there without shoes. And we will work for a couple of days on the supply we have here—and give them back."

"Give them back?... Not immediately. She must walk a little longer. A person who has walked a lot wants less."

8. Sasha gets up from the bench at his entryway.

"Sashka!..."

"I am here on business," she hastens to justify her early arrival.

Sergey does not hear her—he embraces her and starts talking in her ear.

"You are so wise to have come! Where did you disappear to?"

"If they do not call you that means that you are not needed."

"Silly!" Something unprecedented pushes its way through in Sergey, something familial and very simple.

"Serezha!" She takes a drunken breath. She starts to bustle about:

"I brought your favorite herring. It is in my fur coat."

"Herring? We are going to eat herring? And in your fur coat?"

She sets out their meal. Leaning on his hands, Sergey sits down at the kitchen table and smiles blankly.

"I heard Vera at Mefodiyevich's was suspicious: Shu-shu-shu-shu! But I can sense when it is about you! Mefodiyevich said no. She said something louder and he said no, the workers understand, the shop is friendly, it is not necessary. And she said Sergey has nobody, if something were to happen, and Masha.... Are you listening?"

"Ah? I am listening, Sashenka."

"That came from her. This time. If she thought about it, Vera would run circles around Mefodiyevich. What did you do to her? It is always—Serezhenka, Serezhenka!..."

"Ha, Serezhenka! She is interested in her percentage. And Serezhenka or Mashenka...."

"Well, forget about those percentages! What about you? You earn more!"

"A little more, a little less.... But it was impetuous of her to talk to Mefodiyevich...about Mashka's connections. He himself is afraid of strange connections."

"Serezh, why are you so stubborn? Do you begrudge what a hard worker gets? And just think they will just gloat if you...."

A wrinkle on Sergey's cheek caves in.

"Look, you are so interested in percentages! What about your own?"

"Serezha, I am worried about you...."

"About me?! Do you think that a person can live on my top rate—should Mefodiyevich and his whiskered prostitute collect taxes?!"

"Lord," Sasha says in a hushed voice. "What a difficult person you are!"

Then, after Sergey has gotten drunk and with a grimace of revulsion on his face has begun to chew, she sighs:

"No, we cannot have fun...."

"Fun, Sashenka, is a wonderful thing," he says dolefully, without passion. "Wonderful! If it is an addition to life. But what do we have to add it to?"

"If you wish, let us leave the factory," Sasha says. "We shall get up and go together. We will also do other bad things!"

Sergey laughs and starts to cough. Sasha tickles his back and, kissing him, says:

"Am I ransoming you?"

In the bath, as is her habit, she sits on an overturned bench and Sergey, his head resting on her knees, sits in the water.

"Shall I add some more hot water?"

He shakes his head and does not raise his eyes. Why, he asks himself, does he not have the strength to take this step that everyone has taken in the city? What is holding him back—his sense of correctness? But is it much better to take 50 percent than 60 percent? What is keeping him? The shop got used to 50 percent before he came there. He came and they began to give it. Kolyunya was still singing his song: "Half for you and half for me!" At that time he did not take any out—they shared with him. Supposedly! Now it is necessary to clarify the relations and begin to live without the supposedly. He does not want this. He wants the rottenness that he has committed not to be obvious, he wants to consider himself to be a good person....

Oh, how difficult it is! Is he going out of his mind or something? People are living around him, experiencing joy, and he.... Yesterday in the sauna, stark naked like all the rest of them, Nastenka deliberately charmed him, and he thought to himself that he should be charmed: her still rosy sunburn, the dimple on her supple butt, her pointed little breasts.... And even all this was not enough to distract him from the weight that pulled him down.

"Nastasya," he said with a concealed cold malice into the doll-like ear of Nastenka who was looking up at him on her knees. "I think I will take you away from Dimych.... We will get you a local superman from the tekhnikum—all hot and raring to go...."

"Oooh, oooh!" Nastenka whimpered enthusiastically.

He pushed her away, running his fingers lightly through her hair.

"You are such a little dope—but that is all right, that in addition to the fact that you are also a good girl is even a plus. And we all live at the level of your naivete...."

"I am a dope?" Nastenka raised her cynical young eyes. "I would be interested in knowing in what way. Because I want to find a man who has money and a future? One who can have free time any time he wants it and is not tied down to a machine, one who does not have to be tied to a time clock and is rolling in money?... And who was it who told me that you must love money if you want respect from people—was it not you?"

"Yeees," he answered without hurry, restraining himself. There is so much in us that is still monkey-like, out of the herd: Whoever has grabbed the most is the one you hold on to! I have six people working for me and this means that you have to kowtow to me. Our director oppresses 300 people and they kowtow to him 50 times more. And none of us ever gets around to thinking that you, that is, the people, do not have more evil enemies than I or than he does. You should not kowtow before us but spit in our face!"

With a malicious movement, like a cat, he then pushed the frightened Nastenka off his knees and shouted:

"Everyone come up and—right in the mud!"

"Are you sleeping?" Sasha asks cautiously.

"No."

"Shall we wash our hair?"

"Okay."

Protecting himself from the suds, Sergey closes his eyes tighter.... Why is it like this anyway? And how could this happen—to us?! Why do the workers agree to give half and even more than half of what they earn with their own hands? They agreed quietly, and he had never heard of anybody talking about the percentages themselves! And was this a secret? Especially for those who because of their job had to look the other way when it came to collecting percentages! They were excellently informed. But was it advantageous for them to fight? Even while kowtowing it is possible to make an attempt. The people who collect percentages are a force, a monolith, they are welded together into one, from the receiving clerk

to...maybe even to the minister, they are joined together by material and occupational interests. And he, Sergey, is part of that force. They act like they inspect him and chide him, but in the end he always stands still—respected by everybody, needed by everybody. But if he himself were actually to try to act in the way he recognizes to be correct—then they would swat him down like a fly!...

But what does he think about himself, not being a part of this extortion? The boss—everyone can understand that, that requires no explanation. And who is he if he is not the boss? He is the boss for the hard worker as well. If he leans on him harder tomorrow, he will just begin to try harder and be more envious of others. And if he were to sit down next to him at the bench they would laugh. What changes had come into life with his generation: they had taken the measure of the professional thieves, but held thieving professions in esteem!... And would it not be uncivilized of him to require of Sasha and Nastenka that they not see him as respected and well-established?...

He laughs bitterly and shakes his head.

"What?" Sasha bows down. "Did you get something in your eye?"

"No," he answers softly. "I was just thinking to myself."

"To yourself, to yourself! You should try to share. What do you have here?" She pokes him in the region of his heart with her sharp fingernail.

"Here? No, here I like you better!" He drops his head to kiss her on her breast.

"Pig!" she says as though to someone quite young, with the same feeling she always has when she soaps him up and wipes him off with the towel, and she kisses the shining thin skin on his nose which is pink from the hot water.

## 9.

"Are you going to grow up like your papa and become a master with a large letter?"

"Nooo!" Kolyunya answers for his son. "He is our mathematician."

Sergey takes his hand from the child's large head and says:

"No good. There are too many mathematicians already."

"No, he has a brilliant mind, only in mathematics, true, son?" Kolyunya hugs his son to himself. The boy clings to him, but he also resists in his confused childish peevishness. They are strikingly alike: they have large foreheads, light brown hair, and eyes of an identical color.

"The spitting image of his father, right?" Kolyunya loves to boast. And he adds, having him in mind only himself:

"A master—he is a master in everything!"

The boy runs home to him after school and will not stay long, after the first bit of tenderness he becomes gloomy and, a shy boy, looks in the direction of the door, not in a childlike way (Kolyunya says he grimaces like his mother), but pursing his lips, wrinkling the bridge of his clean little nose and hiding his eyes, as though caught in a lie.

"Is it time?" Kolyunya tries to catch his glance. "Well, go ahead and go. Do not let them know. You will not tell them? No?"

And he puts in the pocket of his school uniform jacket a 10-ruble note that has been folded in a square. The boy, already having assimilated adult baseness, lowers his eyes, checking to see how much has been given to him, and gloomily wiping off Kolyunya's farewell caress, runs out, clumsily stamping his new shoes.

"Do you allow children to run when they are indoors?" says a man in a good grey pullover and a fashionable jacket as he raises the bar over the door to the upright. He is accustomed to speaking frankly. In terms of his height and weight he is like a weightlifter, and his voice is low and humming.

"What can I do for you?" Sergey stands in his way.

"Inspection," he looks at Sergey and, shrugging his heavy shoulders, orders:

"Go in!"

A graying young man in a dark, short suit who is following him wipes his glasses and returns them to his face, precisely placing the nose supports in the blue, moistly glistening indentations that have been pressed out by them on the two sides of his nose.

"Here," he gives him the first black, artificial leather file. "Go to the deputy's apartments and get a paper for the document!"

The third to come into the working area is a heavy-set person about 45 years old with the hands of a fitter-repairman—they have scratches and traces of oil under the nails and in the folds of the skin. His greasy dull hair sticks out in an unruly way and there is a kind of guiltiness in his eyes.

"Ivanych," the first one orders, "get the books from the receiving clerk and have her count the money in front of you!"

"But perhaps...."

"No 'perhaps'! You have been commissioned by the working class to expose those who are robbing it!"

"As I have heard it, an inspection begins with the presentation of documents," Sergey reminds him.

The first man looks down at him from his full height.

"Are you in charge here or something? You will have your documents, show us the way!"

And already looking over Sergey's head, he is about to move in, but Sergey will not let him in, and the inspector, reeling, again looks at him, now even more steadily. Sergey waits. The inspector smooths his combed hair back with his meaty palms, coughs as though he had something stuck in his throat, and slips his hand into his breast coatpocket.

"All right," Sergey returns the order to him. "Come in."

"No, not here, to the dressing room," he answers in a comically vindictive bass voice. "I like to begin with the dressing room...."

"So, open this cupboard!"

Sergey folds his hands behind him:

"Are you going to dig around in personal things?..."

"And if this is necessary?"

"If it is necessary you have to have a search warrant."

"Otherwise," the inspector opens as wide as they will go his bulging, amphibian eyes, "the order I showed you is still an order."

"Yes? What are you looking for? Action!"

"All right," he says threateningly.

The inspector opens the cabinets and squeamishly touches the clothing. Groaning theatrically, he bends over a ragbag that has been covered with newspapers. It is filled to the top with women's shoes.

"What is this?" With a lazy triumph, like someone who has won a victory without a battle, he spreads the bag open in front of Sergey.

Sergey shrugs his shoulders indifferently and does not answer.

Sensing that not everything is all right, Kolyunya sends Dmitriy to investigate. He walks through the corridor and stands around by the bathroom, and on his way back, slowing down his pace, he looks into the dressing room.

"Oh!" the inspector calls to him. "Take this to the supervisor's office!"

Dmitriy takes the bag and after walking a few steps away he looks in and there in the dark corridor he slips it behind the fire shield.

The shop is concentrating on rush work. Kolyunya is not taking his percentage; he sends everything to the reception clerk for payment. He does not see the obtrusive people waiting for their money.

"You do not have much rush work?" Dmitriy pounces on him.

Kolyunya tosses his head guiltily.

"It is the devil's work.... The girls from the barbershop got it. Would you let them burst into tears? A cripple, they say.... Well?"

"Sit down!" Dmitriy scolds him as though he were older. "That has already been done and they will not find it."

Kolyunya's face brightens up, he looks proudly at Fedor Ivanovich and motioning toward Dmitriy he exclaims: "My student! My school!"

The inspector is suspicious of Fon-Petya's personal shoes. He also pulls out some twisted, dried men's shoes thickly covered with dust that do not belong to anybody. At the machine for semifinished products, at the bench at which Dmitriy is learning to sew new shoes, he expresses surprise and picks up the scraps that are sliding from the bench, and with the eye of a detective, studies the stitched scrap of calfskin for a long time.

The hides for the upper and sole from which the last pair have been cut and the pair of shoes itself that were stretched out on the lasts—Sergey has hidden all of this in his desk. "Old four-eyes is poking his nose in," thinks Sergey, "We will burn them...."

"Yees," he motions with his head when the inspector has moved the bench away from the window and is feeling under the radiator. "Beautiful, there is nothing more to say!"

And he leaves. In the office the first thing he does is ask the young man to get out of his chair. He hurriedly gets up, first gathering up the senior person's file. The writers are quite familiar with such a file, which holds everything: a pen, a pencil, an eraser and clean paper, and carbon paper. And they also know the owner of the file.

With a heavy step the senior person comes out of the dressing room, throws Fon-Petya's shoes on the floor, and a second pair that are twisted like last year's acacia pods.

"If you do not have time," he says to Sergey, "assign one of your workers."

Sergey slides over to the drawer, pulls out the orders, which are the first to come into his hand, and turns on the calculator. He answers, pressing on the buttons:

"There are three of you anyway. And my people work by piece-rate and I cannot take them away."

The senior man smiles at him like a foolish child and turns to the young man:

"Tolik, where is the bag?"

"The bag?" Tolik does not understand.

"Yes, I sent it with the boy."

Sergey also looks at the junior inspector, but the senior one turns his gaze toward him, Sergey:

"Well?"

Sergey shrugs his shoulders and cannot hold back a smile.

"Well, call that little snout in here!"

"Mind your manners!" Sergey frowns mockingly.

With the agility of a large beast, the senior inspector hurries out of the office.

"Where is the bag?" he barks at Dmitriy.

Dmitriy does not expect that he would be so frightened. He feigns surprise:

"Which one?"

"You lying little snout!" the inspector bends over him, grabbing him by the ear.

"No, no!" Kolyunya jumps up. "Take your hands off him!"

Fedor Ivanovich gets up slowly, Fon-Petya throws down his hammer and turning to the clients, shouts excitedly:

"Did you see that?!"

Squeezing his grayish fists, the inspector orders Dmitriy:

"March to the boss's office!"

"He is not going anywhere," says Fedor Ivanovich firmly. "You came here to snoop around—well, snoop around. But do not dare to touch the lad!"

The waiting line also starts to hum. Dmitriy gains courage.

"Yes, all right! Let us go!"

"Sit down!" Kolyunya shouts at him. "Are you my student or whose? Sit down, I order you, and work!"

"What a disgrace!" one can hear from the waiting line.

"You hurry here and they are bothering the masters and will not let the reception clerk work!"

"Be grateful that I have not closed the shop down completely!" the inspector shouts to the people waiting in line.

"What kind of person are you? And what are we supposed to do—walk around barefoot?"

The inspector raises his hand as from a podium when they want to quiet the people down.

"Comrades! I am your representative here! They are robbing you mercilessly, somebody must...."

"Who is robbing? Who?" Sergey comes out. "What do you have—facts?!" He looks with hatred into the bulging eyes of the senior inspector. "We have not taken a single kopeck from a single person here without doing concrete work for it! But here you, esteemed Leontiy Pavlovich.... Do not open your mouth, we know you inside out! You...know—you deserve no respect! You come with a mandate to snoop around in the shop, in the stores, you act like a pedant, you scum!"

"Whaaat?"

"You heard me! Was it not you yesterday in the aquarium, in the box room, loaded down with sausage?"

Leontiy Pavlovich strains forward with his immense trembling body. Sergey, looking directly into his eyes, which are rolling out of their orbit, comically chuckles:

"Are we going to fight?"

"The boy!" Leontiy Pavlovich starts to wheeze. "And I am going to turn your stinking little place upside down! I will get the facts!"

An hour later the office is crowded with shoes brought there by Leontiy Pavlovich.

"Any normal person would understand that these are my own shoes off from my feet!" Fon-Petya manages to shout, and, having taken off his shoes, demonstratively walks around in his slippers. Ivanovich and Tolik turn their eyes away guiltily, and Leontiy Pavlovich does not want to hear him.

"Are you concealing something?!" he shouts to Ivanovich without taking notice of Fon-Petya.

"And if that is so, what of it?" Ivanych justifies himself, wiping the sweat from his brow with a soft kerchief. "She is only short 8 kopecks in the cash register—so what am I supposed to have done?..."

"And I say that cannot be! It must be more! Count it yourself!"

"I counted it. Eight kopecks. So what am I supposed to do?"

In spite of all of his experience, Leontiy Pavlovich cannot get control of things. This young chief behaves himself with such wild unpredictability. There are no disputes for every kopeck in the document, nor servility, nor bribes. And he does not go to the telephone and he does not call influential citizens for help. Everything is somehow abnormal and confusing. Leontiy Pavlovich feels like a locomotive that has been separated from the cars—everything is so unusually light and alarming.

"Numerous cases of increasing the prices on the list have been discovered!" Leontiy Pavlovich dictates to Tolik, who is writing nervously and hurriedly, all the time squirming on the chair and tapping his knee against the pedestal of the desk. "In the order under No.— 1 ruble 20 kopecks were taken for a stacked heel, but a solid heel will be used. The sum of the overcollection—60 kopecks."

"But it had not even been done yet," in a tiny voice, as if to himself, Ivanych expresses doubt. How can we know what will be used?..."

"Nothing would make them assemble one! It will be solid, and that is all there is to it!"

Ivanych bends over more and wipes his face with his kerchief. In his figure there is so much restlessness, it is as though he is not the inspector but rather is being accused of the abuses. He wipes his face and hides his hands—first he sits on them and then sticks them between his knees.

"In the order for No.—"

And Sergey does not recognize himself. A terrifying, uncontrolled gaiety plays in him. He is always so cautious and flexible in such situations.... He is ready to act repentant, be a straightforward fellow, flare up, be righteously indignant, degradingly offer money—always help

yourself! And he would maliciously take pleasure in knowing that he created a spectacle. Not they—he! And today...has it broken down? Or has inspiration taken the upper hand? He is in charge of the entire spectacle. He! Only he knows or anticipates that in the end he will do something that cannot be corrected.

"Yeees," says Sergey with a taunting smile. "But imagine, Leontiy Pavlovich, what would happen if I responded to you with respect: somebody would curse at you (they curse you frequently) and I would say: No, Leontiy Pavlovich, I would say, must be understood: well, should such an outstanding man be given a job as a bookkeeper at a trade tekhnikum? Leontiy Pavlovich is the type of person to be a minister. And—a bookkeeper? And in public control with his knowledge of finances and with his character.... Oh, how can you drown ambition! And your material situation would be corrected...."

# 10.

The next morning Sergey brings into the storeroom the largest sack—it is actually more like a bast monster than a sack.

"Dimych, come help!"

Dmitriy tosses out pair after pair and the sack swallows them up. And it takes all of them. On its side, inflated, it stands in the halo of the disturbed dust with the ends of the knot awkwardly pointing upward.

"It will be interesting to see whether it goes through the door or not."

"It will not go by itself—we will help!" Dmitriy assures him.

The sack looks like a gag in the wide open mouth of the trunk of the car. With a scream that sounds like a war cry, they stop at the Palace of Labor.

"All right, so," Sergey defines his task. "Let us take it in and let us not ask anybody."

The cleaning lady follows them with a confused stare from the doorway to the stairway, but then she remains at her little table which has been pushed into the corner away from the draft, not knowing what they had brought past her, where they were taking it, why, or why she had not demanded an explanation or if she should demand one, or what she could expect in connection with this now....

"Into the corner, put it in the corner. All right, excellent! Will you wait for me in the car? Hold the keys."

"Allow me?"

Upon entering, Sergey is surprised at how meagerly the office is furnished: a desk, two chairs for visitors, an empty safe, furniture that looks like pencil boxes from a kitchen set—and that is all. But the office is large and it seems that that was intended: it has clean walls, high ceilings, and a shiny parquet floor. It is not an office but a storehouse of fresh air.

"I am from the footwear shop which they inspected yesterday on your order," says Sergey, as though to an enemy, staring at the person in charge. His suit is made of the most inexpensive material, and his tie as if on purpose, is made of average materials. In the space under the support panel of the desk one can see his feet placed evenly, like those of a primary school child, in glued hightop shoes made by the oblast association where buyers from all the stores of the country pass their innumerable businessmen colleagues with sour looks on their faces. "Here is the document from the inspection, and the shoes, if you will allow me, I will bring them in now."

"Yes, please."

"Who is he?" Sergey tries to guess. "A confirmed disinterested party? Or an opponent who is putting everything on the line for the sake of his career?" He wants very much for him to be a hypocrite. Then what he wants to say would sound appropriate.

The bag is dragged into the office, scattering dust and leaving in its path the traces of the bleached fiber of the old bast matting. Sergey follows his reaction from the corner of his eye: a brief surprise and then laughter, which is immediately taken under control so that he, Sergey, would not be offended by his humor. He, the highest person in the office, sitting here with this monstrous bag, had expected anything, but what do they want....

He feels his face turn red, sees the perspiration on his hands, and absurdly shouts:

"When are they finally going to start thinking of us as people and not convicts?! What is this—digging around in our personal things, slipping their hands into our pockets?!"

They are listening to him attentively and it would be stupid to shout any more. Breathing heavily, Sergey falls silent.

"Sit down," they invite him. "Let us start from the beginning. My name is Sidorenko, they call me Petr Sidorovich."

"Sergey."

"They reported to me yesterday about your behavior. And the report about your shop is not flattering. Frankly I did not expect that you would come here. But let us get down to business. As I understand it, you have complaints about the inspection?"

"Complaints? I am outraged! Here is the price list, here is the document, here are the shoes themselves for which they are accusing us! Let us compare the one with the other and figure that out!"

"Yes, let us." Petr Sidorovich opens up his copy of the document that has been brought by Sergey. "With a shortage in the cash register of 8 kopecks," he smiles so that is barely noticeable, "I think that you agree?"

"I agree."

"The complaint book was not in its place?"

"I agree."

"The bag full of unfilled orders?"

"Slander."

Petr Sidorovich raises his eyes. Is he going to penetrate Sergey with his truth-seeking gaze?! Closing his eyes to his candor, like drawing a drape, Sergey looks into the burning gray eyes of Petr Sidorovich. And suddenly he feels that his hypocritical blind will not work, that something will come through. A cunning smile slips over his face and Sergey casts his eyes down and says:

"The bag! What kind of a unit of measurement is that for such a serious document, for an act?..."

"Did you trick Leosha?" Petr Sidorovich starts to laugh. Sergey cunningly plays with his eyebrows and, it seems to him, he understands that he has asked to be frank: If he continues his lies, this person will inevitably, once and for all, separate himself from him with his officiality.

"Further—increased prices. Well, here is the list! In the order for No.— they took 1 ruble, 20 kopecks for a stacked heel but they were going to use a solid heel. Nikolay Ivanovich told me about this entry, and here we are wrong, we shall make our apologies."

"I accept them."

"In the order for No.— 3 rubles were taken for the rear half sole, and all that was done was an ordinary replacement of the ankle part. The sum of the overcollection— 2 rubles."

"Here are these shoes. They were stretched."

"Can one call in an expert?" Petr Sidorovich raises his staring eyes. "Does everything done here correspond with the description of the work on the price list?"

"No. It was done in keeping with my efficiency proposal."

"And so less labor was expended?"

"Naturally. It was an efficiency proposal."

"And the price?"

Sergey sighs noisily.

"Have you never tried to take one of these for repair? When the arches are broken and the shoes have no laces?"

"I have tried." Nodding toward the back of the chair, Petr Sidorovich laughs. "My wife ran and ran through-out the shops and then threw the shoes at me. It is your system, she said, do whatever you want to! So I gave Arik in my own neighborhood 10 rubles and everything was done. It is too bad but I did not know that I could get it done by you for 3 rubles!"

"For the future you will know."

"Thank you. But let us clarify right away: I can waste my own money however I want to, but I cannot allow anyone to rob the workers."

"Ha, you!" Sergey slaps his needs and shakes his head. "And it never enters your mind that you were the one who created the situation with your 10 rubles for a pair of arch supports? Not just you, the entire country!"

"Ah, that is interesting!"

"Well, if you were in the mood for talking, it will get even more interesting! This means that if you take 3 rubles from a client, this, in your opinion, will cheer him up. But if you take a ruble, no, not a ruble, but 19 percent, 19 kopecks, and pay it to the shoemaker for the work on which he has spent a half shift—what is that?"

"No, excuse me, a ruble is not 'according to us,' it is written in the price list—a ruble."

"No, you excuse me! You have taken that price list not to the fool who drew it up, but you are going to a shoemaker demanding that he must live according to this foolishness! And he cannot! And he does not want to. You can think up a thousand reasons but you will find nobody who will replace arch supports for a ruble; but at first he will take 3 rubles—a realistic payment for his labor—and he will add some to that for the risk. So that he will have something with which to pay when the Leontiy Pavlovich whom you have sent catches him for the 3 rubles and says that 10 kopecks overage is sufficient to open a criminal suit! And now I have a question for you. When a shoemaker is forced to work a half-shift for 19 kopecks, do you not feel obligated to step in on his behalf? After all, he is just as much of a worker as the one you are



protecting without saying anything about taking 3 rubles from him. In exactly the same way the money is deposited into the cash register from which you receive your salary."

"I did not understand—are you reproaching me with my salary?"

"I? I do not have the right to reproach anybody. But I shall talk about myself later if you allow me. But a second question for you: whom have you actually defended—the person who comes to the shop or the person who works there?"

"If I accept what you have said for the truth—nobody."

"Hey, no! If that were the case! You are concerned about interests. And greatly concerned. But whose?! In the first place, you, like a bowl in a china shop, send Leontiy Pavlovich for inspections!"

"No, wait, no, no!" Petr Sidorovich is no longer pale—he is gray. His face moves impatiently, his eyes grow dark, and they sparkle like anthracite. "Leontiy Pavlovich—yes, he is crooked. But, after all, we take people away from the machines to do inspections, and they are not familiar with the tricks of the consumer service workers or the mechanics of abuses in trade. We need somebody who knows. We can use Leontiy Pavlovich for reinforcement. But others should be in charge of the inspections."

"Leontiy Pavlovich is in charge. And he should be ashamed. You understand, a decent person would be ashamed to do this! I have seen and conducted dozens of inspections. Either decent people come, who out of conscience do not delve into things, or extortioners come. They go into everything! In order to steal."

"Is that the way it is? Interesting. But I am still inclined to believe that the majority of the comrades whom we send for inspections are people of conscience and principle."

"Believing in conscience? Excellent! But why do you, who believe in the conscience of the inspectors, not also believe in the conscience of the shoemaker? Well? Why are you smiling? Or has the conscience of the shoemaker not passed the test?"

"No, no, that is not what I think. I am smiling at the fact that your thinking is convoluted."

"Mine? But what if that is only the way it seems and in fact everything is turned upside down in your awareness? Here Leontiy Pavlovich found a bag full of unfilled orders and wrote an entry about it in the document. Who will be responsible? I am in charge. How am I supposed to answer to my superiors? With a bribe? And how, in your opinion, am I supposed to deal with the person who took this bag? Correct! With money. The inspections are

regular and therefore I take the money from the shoemakers in advance with a little extra so that there will be enough for the inspections and my superiors take it from me. Everything is worked out down to the kopeck: each day, each minute gets 40 kopecks out of every ruble he takes from under the counter and I get 60. That is the way it is."

Petr Sidorovich listens intently.

"But yet, that," he says at the top of his voice in one breath, "is exploitation. Are you aware of what you are getting mixed up in?"

"I am. And have you understood that you are my accomplice?"

"You...you throw that out! Your place is behind bars, and I will do everything in my power to make sure that that is where you will be!"

"Do you have in mind me personally or all of us?"

Petr Sidorovich turns away in revulsion, his teeth clenched together.

"I agree," continues Sergey, "Our place is behind bars. But you personally do not have enough power for all of us. And what is the point of putting just me in jail?"

"A point will be found! If we throw a couple of dozen people like you in jail...."

"And then what? Here is a transmission box. Replace the old gear with a new one—what do you think, it will start turning in the opposite direction?"

"What are you saying? That we have an uncontrollable country?"

"Why that, Petr Sidorovich? I want for you to find a variant of control. A reasonable one, but the main thing—a fair one."

"We are looking for such a variant. You should read the newspapers."

"And in your own mind do you think, when you are reading, that it is possible?"

"It is possible!"

"Then tell me, please, who is engaged in these searches in daily life—our valiant consumer service leadership?"

Attention again begins to gleam in Petr Sidorovich's eyes.

"And you seriously hope that we will straighten ourselves out?" says Sergey. "No, we shall shout that we are innovators, we shall make a fuss, but in the end we shall use all innovations for our own selfish purposes."

"Oh, my God!" Petr Sidorovich laughs maliciously. "You are invincible!"

"On the contrary! Gather us all up and put an end to the matter. After all, we are not necessary to anybody but the leadership itself; all of us, beginning with the receiving clerk, are engaged in artificially created work!"

"But who will be in charge?"

"The ruble."

"Back to the proprietor?"

"I am the proprietor!" Sergey shouts, raising himself to full height. "I! And I am 100 times baser than that natural capitalist proprietor! He risks his junk and therefore is forced to value the masters and his clients. But I can heap scorn on the masters! As far as I am concerned they can be drunkards and inept fools—just so long as they are quiet! And I can also heap scorn on the client! And also on the shop—it makes no difference whether it operates at a loss or not!... I am faced with one task, although a dual one: to milk the shop and to make sure that the supervisors like me!"

"There is no need to shout that way, we are frightening the people. Sit down and we will talk concretely. What do you suggest?"

"A return to simplicity. So that the administration at the factory would consist of two people—a director and a legal expert. And the shops would be rented by the brigades. And there would be an agreement which determines specifically the amount the brigade must pay to the factory each month. And as long as the agreement is being fulfilled by the brigade the administration does not have the right either to dissolve it or change it."

"And if you do not fulfill it? For instance, the workers do not make the necessary sum?"

"If they do not make enough they submit an application: we request that the agreement be revised. But until the time such an application is submitted the proper sum must be paid kopeck by kopeck."

"And if it is not paid?"

"They are responsible with all of their property."

"Oh-ho!"

"So what? A person must be independent and must solve his own problems and bear his own responsibility. Is it really better to have our situation today where the master is in the position of an adolescent? I do not know about you, but I envision the future as greater independence for man."

"Independence? I agree. But not to the detriment of order."

"Depending on what you call order. For each nail pounded by the master there is a position on the price list and for each step—a bureaucrat saying: 'You may not!' Is this order? This is the initial cause of all our disorder!"

"Stop, stop!" says Petr Sidorovich. "We cannot forget about the Leninist principle of accounting and control."

"Precisely!" Sergey explains. "Where, for instance, where did Lenin say that it is necessary to engender bureaucratic jobs, bribe takers, who will not take into account or monitor the worker? Lenin spoke about worker and peasant control over the bureaucrats, over parasites and swindlers. Not the other way around, notice! I am the swindler of swindlers, I have been placed over the workers to exercise control! Do the workers need me? Does the society need me? Chase me out of here—that would be what Lenin would do! And the old women that draw up those stupid price lists should engage in something useful! And Leontiy Pavlovich should be taken away from his extortion and put to work!"

"I understand, neither a price list nor control—but complete arbitrary behavior on the part of the shoemaker."

"Petr Sidorovich, you studied in an institute and passed political economics! You have money, I have ability in my hands. If you do not like me you go to the next one. What kind of authority does a client need over a shoemaker?"

"Let us assume," Petr Sidorovich said thoughtfully. "Let us assume.... But how is the sum determined? How much do we take from each shop? After all, growth is also necessary: tomorrow the shop must produce more than it did today. But we cannot allow arbitrary behavior on the part of the administration here or there will be more robbery."

"No problem. Agreements could be concluded only at a general meeting of the collective of the factory and the shops could operate as at an auction. We shoemakers know how much we can squeeze out of each shop, we will contend for the best shops, and we will increase the return from each worker."

"Eh-ch, you will be a success—you will inflate the sums...."

"We ourselves will inflate them—and we ourselves will do the work. But for the country, notice, for the country! Not for the Serezha-bosses, not for the Vanka-directors, not for the Lenka-inspectors—for the country! Then mastery will be evaluated according to its worth, and our trade will be regenerated."

"So-so-so...." Petr Sidorovich keeps repeating, considering. "No. Crumbs will remain. The administration will end up with something anyway, in materials or equipment...."

"Oh, yes, Petr Sidorovich!" Sergey gets carried away. "You have grasped the main thing: to deprive the parasites of all possibility of living by others' labor! But there are no problems here either. The supply service, like a brigade in the shop, could become self-supporting. There must be a fixed sum of profit for the state from each supply worker. If goods worth 10 rubles have been brought into the shop—a ruble goes to the supply service. The profit should also come from this ruble, so hand it over and take your own wages. With this kind of organization shortages will no longer be concealed and people will go through the shop themselves asking what is necessary. The service for repair of equipment should also be self-supporting."

"Yeees," says Petr Sidorovich. "Yes," he repeats, more convinced. "Of course, it is necessary to think through a lot of things and many things will be corrected by life itself, but the basis, the skeleton, in my opinion, is healthy. But what will you do, sit at home? You should send a suggestion to the Ministry of Consumer Services and the party agencies."

Fighting but not suppressing the grin that had spread across his face, Sergey says:

"You cannot get rid of the illusion that we consumer service businessmen will begin to use our own hands to chop off the branch we are sitting on! Just consider that I gave you the idea as a gift and you can put it into practice. And we, as has been the case up to the present day, we receive our share from each one of your innovations!..."

"I have found a reformer!" Sergey continues to argue in his mind with Petr Sidorovich. "Whether I make it or not, I am the one they will come after! I am up to my ears in shit.... They will send their own inspectors...their own?..."

The last word sticks with him. Who are his own? Ivan Mefodiyevich, Vera Pavlovna? Or Dmitriy, Kolyunya?

In the shop after dinner he gaily boasts about how he worked over the brains of that office sissy. But he senses that behind his back, as though standing guard over him, waiting its turn, is something bad. And it seems that as soon as he stops talking and starts to think, the time for this bad thing would come.

Dinner is drawn out. Then Kolyunya brings out two more bottles and calls for a smack. But it is as though the vodka is diluted—it cannot distract him from whatever it is that is hanging behind him.

He sets off for home on foot. He is so drunk that he guesses about how people are shying away from him.

And he cannot fall asleep. Churning around in his mind are: "Cut off the ends, cut off!..."

In order to calm himself down he tosses off a glass of cognac, he sits looking over a saucer with lemon, and rocks. "Bad, everything is bad, so bad that it could not be worse."

He is not able to wait for the effect of the cognac and again, with clenched teeth, he draws the sickening poison to him. Pieces of his latest thoughts float in his head, and just that one feeling—bad, bad!—will not grow dim and will not leave him.

Soon he finds that he is crying. The tears flow without bringing relief. Having lost his strength, he crawls along the floor, scratching his face on the prickly fibers of the rug, and grates his teeth terribly.

Then, he looks at the light outside the window as though it were a star, that naked yellow bulb under an enameled shade. As boys they used to shoot these light bulbs with sling shots. Such was the joy—to hit it. And such blackness appears in his eyes because of the fact that he has looked at the light.

"I would like to kill myself like that...."

## 11.

He is driving to the factory. Because of the notification in his pocket and the thought of what is before him, he shivers and becomes cheerful.

Sasha meets him with panic in her eyes.

"He is ranting and raving!" she whispers loudly. "He ordered you in there—immediately!"

The salt and pepper, wolfish-colored wild hair of the director which will not lie down stands on end like that of a madman. Sergey involuntarily laughs. It is surprising: he does not feel a hint of fear of this man who was usually feared by the entire factory.

"Well?" the director gives him the floor.

"What?" Sergey asks innocently just to be funny.

"Are you acting like a clown? What kind of nonsense was that? What percentages? If you engage in extortion you will go to jail!"

"Is it you who are repeating this, Ivan Mefodiyevich?"

The director jumps, inflating his broad taut chest and waving his hands in the air as though looking for something with which to hit Sergey.

"You will go crazy," Sergey hems, "and then call someone."

Uninvited, he sits down with Vera Pavlovna and with joyous anticipation looks into her eyes.

"Sere-ozha-a!..." she acts as though she were ready to forgive him everything (Vera Pavlovna's well-known act is that of a universal peacemaker). "From anyone but not from you...."

And Sergey has a response to Vera Pavlovna: Smiling, he looks at her with adoration.

"Verochka Pavlovna, help me!"

She gives in easily, for apparently she needs the same thing.

"And it is always that way: whatever you do—Verochka Pavlovna, help!"

"I must leave, Verochka Pavlovna, quietly and without delay."

"What do you mean!" Like in a volleyball game, she pushes her hands in his direction. "And do not stammer! Go into the shop and I will try to calm Mefodiyevich down," she promises generously.

"Verochka Pavlovna, I do not need to smooth things out. I need to leave!"

"YOU need to!"

"And what do YOU need? To hold back and destroy for show—they say that we punish these demoralized ones mercilessly? And is this also to teach their own people a lesson?"

"Why should I come to you, Verochka Pavlovna? A person in my position is ready, they did not know how to show me the door more tactfully.... No, explain to Mefodiyevich that it is in your interests that I leave QUIETLY."

The kindly puffiness of her face is distorted into something vicious. And Sergey knows this, and now she will start talking like a crazy woman.

"Boy, all you have to do is lift a finger toward Mefodiyevich and nothing will be left of you but a wet spot on the floor."

"Verochka Pavlovna, I am a simple chap and I will speak openly: do not arrange for a communication for the shop today—I will destroy the whole office."

"Look! You made it! It is my fault that I talked Mefodiyevich into taking you after all that slander. But he said: 'A dog is used to chasing cars. But it will also chase sleds!'"

"It will chase them, oh, how it will chase them!"

"What do you think you are, a bird in a nest? What can you do? After yesterday's inspection document, if we have the slightest desire we can have a criminal case ready against you! Whom are you scaring, criminal? With what? A fairy tale about bribes? Everybody who is arrested points the finger at somebody else and threatens them."

"Yes, that is true, Verochka Pavlovna, but there is a smell.... What do you think...it smells like?"

A bell rings at the end of the day.

"Do not leave," Vera Pavlovna's voice comes over the loudspeaker. "Masha is coming, turn over the shop."

"It is pleasant to deal with intelligent people!" Sergey answers, although the loudspeaker is already silent. At this point he gets up and leaves: Mashutka can wait until morning, she is no big deal.

The transfer takes place without a hitch, cheerfully and lightly. Masha signs everything without looking at it. "She is afraid that I will change my mind!" Sergey consoles himself. And he rolls out of the shop as though he were sliding down a slide on a playground. Zip! Zip! And he is free.

He makes a great show of taxiing out of the yard, flies along the street like a horse galloping up to a barrier, drives his car up to the curb, jumps out of it and runs to a pay telephone. The girl who is hurrying out of the telephone booth acts like she thinks he is crazy.

"Sasha? Sashunya, think of something, and skip work! What? No, quite the contrary! I cannot wait, Sashenka, joy cannot be stored. So. I understand, I am meeting you."

Outside the city in a roadside restaurant Sergey convinces her:

"Sashka, this is unrepeatable! For once in your life do something without thinking, throw away everything! Tomorrow we will be on our steamship, remember, like on the Dnepr?"

"Calm down, do not be a child! I go on vacation on the first and the first is when we will leave."

"Sasha, I must do it today, today!"

"But what about tomorrow?"

"But what is tomorrow? What is it? That because of it we never live today!"

"Sereozh! Stop playing around, be patient!"

There is no longer any recklessness in him: Sasha can see that. But he keeps it up. Courage! He kisses her on the steps and, as though kidnapping her, he grabs her hands and pulls her away. He feels that all has to do is to flag, to think just for a moment—and that inferno that has been following him around for so long will come crashing in.

And it comes. It grips him while he is sleeping. He forces himself awake, his heart beating wildly and his mouth dry, sticky and prickly like a polisher.

"Quiet! What happened," he tries to regain his reason. "Is it not natural to take joy in freedom? What comes next? A slavish question!"

And really what does he have to be nervous about! He has saved up enough for several years. At least in the next 10 years he can foresee no material difficulties. He can arrange for himself a "dead soul" and then do whatever he wants to. Or do nothing.

But what would that be like—not to do anything? Ha! "A dead soul!... How much point!... Fools think: Give a person everything and he will stop working. No, he will run to work, he will crawl on his knees asking for work!..."

But no! That is a complex! If you take a horse out of the harness he will go around in the same circle he walked in all his life when he was being led! Oh, oh, oh, he is afraid of freedom!...

What nonsense—freedom from work. One can be free only for the sake of work. Of what? That is the question. Here he has nothing to do. Sew shoes? His hands yearn for this work, with all his soul he is drawn to it! But bending over a bloodsucker...no. Whatever you like, but not that. Is he himself a bloodsucker? He has had enough of that. Up to his eyelids.

But yet he simply has nothing else.

Sasha cannot sleep either; she just lies there silently. It becomes light. The rumpled bedding, as she sees it, lying with her cheek on the sheet, reminds her of the Baltic days. Sergey was happy then, on the seashore. What happiness that was when he was happy!... But what, what is tormenting him now?! Lord, so many people envy him, but he...he does not love her? No, he does not. Well, he should get somebody else, and throw her to the dogs! Anything would be better than this torment....

She raises up to look him in the face to learn the secret of this sleeping man. Sergey hears her but does not open his eyes—he lies on his back, revealing the face of weak, tortured old man.

"God!" Sasha is frightened. "And I—jealous, a crazy old woman."

After Sasha leaves for work he falls asleep. He wakes up in the afternoon. Looking maliciously at himself in the mirror, he shaves. Then he takes out a box of instruments, working like a shoemaker with a screwdriver he quickly removes several nails from the door paneling, finds the end of a fishing line and, quickly pulling it, pulls out some polyethylene packages which contain flat bundles of money. He moves quietly. Not because of anybody else—he needs silence. When he puts the nails back the sound of the hammer seems to be striking his bare nerves.

He shakes the money out on the table, divides the uniform packages into two parts, and looks through the apartment for something to package it in. He takes a candy box in which Sasha has been keeping small household items.

Now—the letters.

"Dimych!"—he writes on the paper in one continuous movement. And he sits there for a long time with his pen aimed at the first line. He wants to say something memorable about himself. But what can be remembered about him? What will he himself remember?

He sits hunched over the paper, his head in his hands—it is just as though he were made of fresh clay, intending to sculpt himself over again.

No, there is nothing to remember about him. Nothing! He has lived half his life, and here—nooother. Tears fall on the paper. He shudders and thinks that he should speak not about himself but about the person to whom he is writing. "This is how one should live," he reproaches himself. "Not thinking about oneself...."

Having completed his business, he calls Sasha so that she will not come today and lies down to sleep and gather his strength for the main event.

He gets up at 3 o'clock in the morning and is in a hurry.

It is quite and fresh on the street. A typical night.

A taxi roars by crazily and stirs things up. But then peace again embraces the street.

The path leads him to the front garden. In order not to turn around he walks through a flowerbed—it is soft like something living—and he jumps over a fence and ends up near the sheer wall of a 12-story building. There under the trees it is dark like in a well. Sergey looks up and,

staggering, in panic reaching out for the wall with his hands, he drops his gaze. He is innately afraid of heights and this wall, if one were to look up to where he is standing, goes unthinkably high into the heavens, which, beyond the black edges of the roof, gape like an abyss.

His skin shrivels from a cold feeling straight from the heart. He clenches his teeth, and feeling the wall, looking for something to grab onto, he orders himself to raise his eyes. A multitude of veins strain under his chin, but he pulls and pulls his head back and—looks into the icy abyss. He looks for a long time, feeling the challenge. "That is how it is," he says with satisfaction. "That—he affirms—there."

It is as though the elevator were waiting for him—in an instant it starts rumbling its welcome, and opens wide its illuminated interior. And after that, Sergey imagines, there will be a stairway made of steel bars, a small door—a hatch, and the roof—gently sloping, covered with darkness, sticky.

It is all that way: the little stairway, the door that is half his height, but—it is locked. A tiny, simple lock. All it would take would be a paper clip or two matches, but he has nothing in his pockets. Then the lock clicks behind him. Caught, like a petty thief, Sergey squeezes up against the stair. The door opens and a cat flies out. He lands on his paws, stretches his neck like a predator, and looks at Sergey with sparkling eyes.

"Whew!" Sergey lets out his breath. He thinks, "There is so much cowardice in me! All my life my tail has been tucked between my legs!..."

He squeezes the lock in his fist and twists it with all of his strength and fury. A grinding and a squeak—and the bottom part of the lock is ripped off.

No longer distinguishing the edges of the roof, Sergey moves along the smooth slope. Terror enters him through his feet. His legs grow numb. Here is the edge. There are the low railings made of twigs the thickness of a finger and then the abyss. Feeling a loathsome trembling in his knees and waist, he bends and sticks out his neck so as to see for the briefest moment the abyss, the bottom of which is illuminated by the light bulb at the entry to the hallway. He is so struck by the height that he falls on his back and, quickly, quickly, on his hands and knees, he crawls right back to the elevator housing.

Shaking all over, his teeth chattering, he laughs: "What, no guts?..."

He is not afraid of death—he is afraid of the abyss. And it is as though some small person in him who is more afraid of the height than death, pleads with the large person in him: why push me off the edge? You want to kill yourself? But I am afraid! Do I really have to go

through this terror just so you can die?... And why do you want to die? What for? Those who drove you away from life will continue to eat, drink, and laugh at you like the ultimate fool!...

"I will not do it now," thinks Sergey, "I will never do it." Beaten and broken, to return to the same baseness, atone for his rebellion again as he did after he worked at the center for preparing circus programs, find himself another Ivan Mefodiyevich, to earn his favor....

Squinting his eyes in a frenzy, he breaks away from the elevator housing and runs. His disobedient legs beat on the solid surface. Which step would take him over? Suddenly with a blinding pain from the railing, he goes head over heels—into the emptiness. And at that same second, he can see: Life!!! To live!!!

He twists, grasping the air with his hands, looking for support.

From within him roars a heart-rending: "The end! The end! The end!"

But he flies and flies. He flies so long that he develops a crazy hope: "I am sleeping. And it is dark. This is a dream! Why is it dark?"

He guesses: his eyes....

"Open your eyes!" he cries to himself. "Do not die a coward! Open them!"

He raises his eyelids. He sees a porous brown mass that has been thrown over him and begins to beat him mercilessly, painlessly breaking his legs and his spine. Then—a spark, blackness and—weightlessness. Complete weightlessness and the feeling that even that will disappear.

### (Conclusion follows)

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### PRC Economic Reform Discussed

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[Article by I. S. Oleynik, candidate of economic sciences, Institute of Economics of the USSR Academy of Sciences, and G. N. Oleynik, candidate of economic sciences, Institute of Economics of the World Socialist System of the USSR Academy of Sciences (Moscow): "The Economic Reform in PRC Industry"]

[Text] During the past 5-7 years the PRC has been conducting large-scale economic experiments within whose framework the country's leadership is trying to

discover the most effective organizational forms and economic methods for management of the national economy. While during the preceding period (1979-1984) major efforts were concentrated on the reform in agriculture and stimulation of the private sector both in the city and in rural areas, in the next stage, which began in 1984, it is planned to work out an effective system of economic methods for management: to find an optimal combination of plan and market, to expand the economic independence of enterprises, and to increase the motivation of economic units to work effectively.

### **Peculiarities of the Modern Stage of the Reform**

By 1986 it was obvious that partial, not always clearly planned or completed, transformations did not lead to the creation of an integrated mechanism for economic management of industry or successful work of the numerous and diverse economic object. Excessive use of market levers led to a situation where at the beginning of the 1980's economic instability had significantly increased in the country, there was more inflation, and various kinds of disproportions were aggravated. At the same time a number of enterprises began to operate considerably less effectively, there was a greater shortage of many resources, and prices for raw material and food products increased. During 1982-85 about 25 percent of the enterprises in the industrial sector were operating at a loss. The increase in output of 26 percent that was achieved during 1978-1982 required an increase in capital investments of 37 percent, and the number of workers had to increase by 16 percent annually. The return from 100 yuans of fixed capital decreased by 8 percent during these years and labor productivity increased by approximately 2 percent per year.

The weakening of state control over the activity of the enterprises led to a situation where the growth rates of investments in capital construction in 1981-1984 exceeded the planned assignments by a factor of almost 10. There was a sharp increase in the shortage of construction materials: prices for them increased by 30 percent and more. The expenditure part of the budget considerably exceeded the income. The overall outlays for state price subsidies amounted to more than 30 billion yuan or about 25 percent of the budget income. It became clear that it was necessary to change the tactics "conducting the reform."

To this end, in October 1984 the CPC Central Committee adopted a decree concerning the economic reform. If the basic task was to shift the center of gravity of the economic transformations to large industrial enterprises and to make these transformations comprehensive and as balanced as possible. The reform program is intended for 5 years. The general leadership of the reform is the responsibility of the State Committee for Transforming the Economic System which was created as early as the beginning of 1982 and has the appropriate local divisions. The leader of the committee is the premier of the State Council, Zhao Ziyang.

They singled out 49 large cities to test the new management methods. Selected as one of the major testing grounds was the city of Chung-Hsien, where about 40 experiments will be conducted simultaneously.

### **The Reform of Planning**

The restructuring of planning is perhaps the central part of the reform. Its goal is to considerably weaken the role of state plans and strengthen market factors in development. At the end of 1984 they officially proclaimed a course toward creating during 1986-1990 the so-called "triune mixed economy." It envisions combining:

- directive planning and term prices for the basic (strategic) kinds of bids;
- directive planning that actively utilizes economic levers (taxes, credit and so forth) with sliding prices for a wide assortment of industrial products and consumer goods;
- free market regulation of production of nonbasic foodstuffs and consumer goods.

In keeping with the Temporary Rules for Improving the Planning System, approved in 1984, within the framework of directive plans they will plan the output of the more important kinds of products and determine the rates and proportions of development of the entire national economy. Beginning in 1985 the number of centrally planned kinds of products was reduced from 120 to 60. The list of products from agriculture in subsidiary industries purchased under the state planning policy was also reduced, from 29 to 10.

It is assumed that the state plan for 60 kinds of products in value terms will encompass approximately 20 percent of the gross industrial output (VPP). Approximately 30 percent will be planned directly by departments of the State Council and local administrative agencies. Directive planning will regulate the production of approximately 40 percent of the VPP. In the event of overfulfillment of the directive assignments, the enterprises can use 2 percent of the above-plan output at their own discretion. The production volume and the output list of the majority of consumer goods, several kinds of agricultural products and products from subsidiary industries, and consumer goods that are not in the area affected by directive or controlled planning will be regulated by the law of supply and demand, that is, by the market.

Chinese economists think that an indispensable condition for the reform is the restructuring of the system of circulation of goods and services. This suggests more active utilization of the law of value within the framework of the "planned commodity economy," that is, an economy that will be partially regulated by the market. As early as the middle of the 1980's the list of goods included in market circulation was significantly expanded. In many large cities during the course of the reform of wholesale trade they opened up trade centers for

selling industrial goods and items from subsidiary industries. They opened up free access to private producers. Throughout the entire country numerous (about 40,000) markets have been created for free trade in agricultural products. The ban on trade in means of production has been lifted; 600 special markets have been created for their sales.

The formation of prices for the majority of goods produced within the framework of the guide plans will depend basically on the ratio between supply and demand. Various kinds of prices have already been introduced: state (directive), "floating," which can deviate from state prices by no more than 20 percent, and also contract prices which are actually regulated by the market. Naturally, as a result of the weakening of state control, the prices for many kinds of goods began to rise rapidly. In 1984 alone the cost of food products in the cities increased by 30-50 percent, which led to a relative drop in the standard of living of the population. In order to compensate at least partially for the unplanned price increases, the state was forced to pay city residents various kinds of subsidies for food products and subsidize the prices for a number of goods. In many large cities a monthly subsidy was established in the amount of 7 yuans, that is, approximately 5-8 percent of the monthly wages.

### **Expansion of the Economic Independence of the Enterprises**

To expand the rights of the enterprises and gradually change them over to complete self-support and self-financing is the next part of the reform. In essence, it is planned to essentially change the economic interrelations between enterprises and planning and financial agencies and to expand the sphere of economic methods of management. The purpose of these transformations is to make enterprises that are operating at a loss become profitable and to reduce the scale of losses from ineffective operation of economic objects of the main level. Thus at the beginning of the 1980's annual losses from unprofitable enterprises exceeded 4 billion, and total losses of 6 percent of the large and medium-sized enterprises, of which there are approximately 6,000, were greater than the total value of their fixed capital.

How does one motivate enterprises to increase their profitability and at the same time limit the possibility of their uncontrolled spending of state funds and violating planning and financial discipline? A number of actions were taken in 1983-1984 to achieve these ends. First and foremost the effective indicators with which the work of the enterprises is evaluated and the policy for deducting profit into the state budget. The number of planned indicators was reduced to four. The volume of product output in value terms, the assortment with an indication of the quality, profit, and the fulfillment of contractual commitments.

Before 1983 the majority of profit was deducted into the budget. The remainder was used to form the material incentive fund and the fund for the development of production and social and domestic measures. But these residual amounts were so insignificant that the management and collectives of the enterprises did not have sufficient incentive to increase the effectiveness and profitability of their work. Nor did they have sufficient freedom in the utilization of these funds for modernizing fixed production capital, assimilating new products, and so forth. As a result, during 1979-1982 conditions were not provided for rapid development of economic facilities of the basic level, modernization and assimilation of new items proceeded too slowly, and revenues into the state budget decreased. In order to increase the influence of material incentives on the operation of the enterprises and increase the volumes of revenues into the budget, in 1983 deductions from profit were replaced by income tax.

In keeping with the tax law, 55 percent of the net income of the plants and factories will be paid into the state budget. Moreover, the enterprises are taxed by a special tax which is determined with the participation of the ministries and replaces deductions from profit. By the middle of 1984 the system encompassed 98 percent of the profitable enterprises. In the future it is planned to retain the 55 percent tax on profit and instead of the tax for residual profit that is determined in each specific case, it is intended to establish a fixed tax for specific kinds of products. The residual profit will be paid to the enterprise. It is thought that this system of taxation will not only stimulate the enterprises and increase the effectiveness of production, but will also eliminate the need to supervise minor aspects of their work.

In May 1984 measures were taken for further expansion of the independence of the enterprises. They were granted the opportunity to carry out operational planning and management for themselves, to organize the sale of above-plan products according to contractual (market) prices, to regulate the wage fund and the number of workers, to change the management structure, and to form a system of economic ties. It is still mandatory to produce only kinds of products that are planned directly.

At the same time, the managers of enterprises have been given greater rights to organize production and sales activity. In particular, they have been permitted to sell a large part of the above-plan output directly to the consumers, to change the prices within the range of 20 percent, to select suppliers of raw material, and to influence the selection and placement of personnel.

Organizational restructuring is also being conducted within the enterprises: the management structures are being simplified and the management staff is being reduced. According to the Chinese press, in plants with



3,000 workers and more the management staff has been reduced by 25 percent during the past 3 years, and the average age of its workers has dropped by 5 years.

In addition to expanding the rights of the enterprises, the mechanism of economic control over the activity is being tightened. The orientation toward complete self-support led to a situation where if the plan for output of directive products was not fulfilled or even when the products were not in demand, the enterprise could be fined. If the situation does not change for the better, the enterprise is given limited amounts of resources that are in short supply and energy, and the possibility of obtaining credit is limited. A warning about bankruptcy can be declared for such an enterprise. Moreover, it is possible to raise the question of closing a "ruined" enterprise or combining it with another one that is operating successfully.

The provisions regulating the closing of "bankrupt" enterprises went into effect as an experiment at the beginning of 1985 in large industrial centers of China—Wuhan, Shenyang and Chungking. In keeping with these provisions, the enterprise must be closed if the debt exceeds the overall value of its fixed capital, and the total losses comprise more than 80 percent of the value of this capital. For the first time, in August 1986, a plant for producing explosive equipment in Shenyang was declared "bankrupt." Because of the poor management the indebtedness of the plant with 70 employees at the time of closing amounted to \$132,000, the losses—\$132,000, and the value of the fixed capital—\$81,000.

Various forms of subcontracting organization of labor, contracts, agreements, and so forth are widespread within the enterprises. Thus beginning 1 October 1986 Allstate Enterprises introduced a system of labor agreements (contracts). The enterprises were granted the right to fire workers who violate discipline, that is, to regulate the number of personnel depending on the production need.

In the area of wages the "ceiling" on additional payments was completely abolished for workers of many large enterprises. At the same time a progressive tax was introduced for that part that exceeds the corresponding normatives. For example, if bonus payments exceed wages for 2.5 months a progressive tax is imposed on them.

At the same time, there is insurance for workers who for various reasons have been unable to renew the agreement, workers who have gone on pension, those who have been released because of the reduction of staffs, and so forth. In keeping with the new policy, all enterprises and workers under agreement must make deposits into the insurance fund. The deposits of the enterprises into the pension fund is envisioned in an amount of 15 percent of the wage fund, and the deposits of workers—3 percent of the wages. Each enterprise will contribute 1 percent of the overall sum of average wages for all

workers to be fund of stipends for people waiting for employment. People waiting for work receive a stipend in an amount of 50-75 percent of their average wages during the past year. The amount and duration of the issuance of the stipend will depend on length of service. Floating wage rates have also been introduced for payment for labor under contractual conditions. In order to limit the dispersion of investment funds, a 30 percent has been introduced for plans for capital construction that are not included in the state budget.

As the independence of the enterprises increases, the managers also become more responsible for the results of economic activity. Thus if they do not fulfill the tasks for increasing profitability, they are simply fired and more competent specialists are appointed to their vacated positions.

The most constant attention is being devoted to increasing the qualifications of management personnel and placing younger managers at all levels. Since 1984, in addition to various programs for training and increasing qualifications, it has become mandatory for examinations to be taken by people applying for management positions, and regular recertifications have also been introduced. About 10,000 directors of enterprises and other economic managers went through this system in 1984 alone (Footnote 1). And by the end of 1985 all directors of enterprises must have taken special qualifying examinations. Since 1985 the time periods have been limited for the work of directors of more than 3,000 large state enterprises. Under the new conditions for the directors appointed for 4 years and can continue to work in this post only if the general meeting of the labor collective makes a positive decision regarding this.

The desire of the Chinese leadership to eliminate losses from enterprises in the shortest possible periods of time and to change the majority of them over to self-financing leads to the utilization of forms that are not altogether customary under the conditions of socialist management. For example, in recent years the practice of renting small enterprises that are operating at a loss to private individuals and collectives has become widespread. Moreover, in a number of cases the workers and employees are permitted to buy shares of enterprises that are operating at a loss and receive part of the profit in the form of dividends (Footnote 2). According to data for the end of 1985, during the past several years Chinese enterprises have issued and sold shares for a sum of several billion dollars. The purpose of utilizing such mechanisms of self-financing is to reduce expenditures from the state budget and to provide employment for certain groups of the population.

### Expansion of Private Enterprise

The active efforts to form a small-scale structure in the PRC economy led to a situation where during past years the number of enterprises under private, collective, or mixed ownership has increased significantly. According

to data from the Chinese press, in 1985 about 11 million industrial trade businesses of the private sector and about 230,000 cooperatives were registered. Approximately 20 million people work at these enterprises, both in the city and in the country, and their turnover amounted to 25 billion yuans or approximately 6 percent of the overall retail commodity turnover.

The structure of the enterprises of the private sector is extremely heterogeneous. The majority (about 6 million) are retail trade enterprises, there are about 1 million public catering points, approximately 600,000 consumer service enterprises, 800,000 repair shops, and 800,000 transportation enterprises. Today, in spite of their impressive number, private enterprises are still on the periphery of the Chinese economy since only about 3 percent of the work force are employed in them. The proportion of products of the private sector and enterprises with the participation of foreign capital, according to data for 1985, amounted to only 0.6 percent of the gross industrial output. At the same time in recent years "private businessmen" provided work for more than 15 million people, it significantly expanded the sphere of services, and it provided for the transportation of about 40 percent of all commodities.

Enterprises of the private sector are strongly differentiated according to the size and working conditions. The majority employ, as a rule, no more than 8-10 people (many of them—1-2) and they operate on the basis of the family or collective contract. According to the rules, workers of the private sector cannot apply for state housing, pensions, or other social benefits. The wages of these workers frequently exceed the average in industry by a factor of 2-5, but in a number of cases they can also be lower since the minimum level is not guaranteed.

### The New Economic Structure

The need to adapt the existing economic system to the new economic mechanism and to redistribute the functions among administrative, economic and party agencies require the creation of a new economic structure. This process became especially active beginning in 1982. The basic tendency was a gradual weakening of the influence of party agencies on the management of economic activity and an expansion of the rights of agencies responsible for local economic development.

The rearrangement of the economic structure is still far from complete. They have not developed a clear-cut system for dividing authority in the sphere of economic management between central and provincial levels, they have not solved the problem of financing and control of territorial units, and so forth. The overall tendency is such that the cities must become centers that stimulate and, to a significant degree, finance the development of rural regions. In order to reveal the most efficient combination of authority of branch and territorial management agencies, a series of economic experiments is being conducted in 120 cities of China.

Along with the reorganization of territorial management, during the past 3 years there has been a fairly active rearrangement of the branch structure of management in industry. The purpose of this restructuring is to regulate the work of more than 1 million industrial enterprises, to consolidate them, and to eliminate economic units that are operating at a loss. As early as 1984 more than 2,500 consolidated industrial and trade associations were created and were given extensive rights in the sphere of organization of their economic activity.

### The "Open Door" Policy

The course toward active enlistment of foreign capital, credit, technical equipment and technology is one of the key elements of the course of "four modernizations." Beginning in 1978, China has been realizing the points of the "Open Door" policy, developing economic and scientific-technical cooperation with capitalist states in the most active way. From 1979 through 1984 it used credit amounting to about \$13 billion, and direct foreign investments in the PRC economy, according to various estimates, amounted to \$5-8 billion.

According to data published in the PRC, beginning in 1979, that is, at the beginning of the "Open Door" policy, more than 6,000 contracts were signed for the creation of mixed shareholding enterprises. Moreover, as was noted at the fixed session of the VSNP [All-Chinese Meeting of People's Representatives] of the 6th Convocation (April 1986), at the beginning of 1986 120 enterprises belonging completely to foreign companies were operating in China. Investments in these enterprises amounted to approximately \$500 million, and they produced about 2 percent of the volume of products produced at all 6,000 enterprises in whose creation foreign capital participated.

These enterprises are created, as a rule, in special regions that are declared to be so-called "open zones." In 1985 in the PRC there were four of these zones and, in addition, 14 port cities were given the status of open territories. Joint enterprises, according to plans of the Chinese leadership, are to become something like base units for newly created advanced branches of industry and are to provide for the output of products which could have a demand in the markets of capitalist states. It is these joint enterprises that are to help Chinese industry assimilate modern technology and equipment and help overcome the considerable gaps that exist between the technical supply of enterprises of the PRC and developed countries. Thus the level of automation of Chinese enterprises today, according to existing estimates, corresponds approximately to the level of Japan during the 1930's.

The activity of the joint enterprises is regulated by a large number of various laws and decrees: during recent years about 60 of them have been adopted. Striving to attract Western investors, the Chinese leadership is

constantly expanding the list of privileges for enterprises that use Western capital, above all those that supply them with raw material and energy.

In order to expand the scale of foreign trade operations and increase the effectiveness of export-import activity, beginning in 1985 the PRC has been carrying out the next stage in the restructuring of the management of foreign trade. They have created 600 import-export trade companies and formed a network of foreign trade organizations at the provincial level. A number of large enterprises have been granted the opportunity to enter the foreign market independently.

This reform is closely linked to the transformations taking place in the Chinese economy as a whole. Its main task is to sharply increase the effectiveness of the utilization of currency and to arrange close and actually effective cooperation between industry and trade. Most of the responsibility for the profit and losses from export-import operations is to be placed directly on the enterprises. It is envisioned that they will participate in foreign trade activity in keeping with the state plan, keep accounts with foreign partners, and ensure the profitability of foreign economic ties. After the payment of taxes, the residual profit, including foreign currency, will remain at the disposal of the enterprise.

State institutions—the Ministry of Foreign Economic Ties and Foreign Trade and the corresponding provincial committees—will be responsible for functions of coordinating and controlling the actions of economic organizations under their jurisdiction and developing the strategy and plans in the area of foreign trade.

As before, foreign trade corporations will act as PRC representatives in the foreign market. But according to the new provisions their tasks will be limited basically to mediation activity. With the new system, foreign trade organizations will offer services or carry out instructions for exports or imports of goods within the framework of special agency agreements, they will receive commission, and they will operate on the basis of complete cost accounting.

### **Certain Results and Problems**

Data published in the Chinese press show that in past years the PRC has achieved marked success in the economic area. It provided for a significant increase in the volumes of output of industrial and agricultural products, and the standard of living rose. Thus during the 6th Five-Year Plan (1981-1985) the average annual rate of increase in gross industrial output amounted to 10.6 percent and about half of the entire increase was obtained as a result of increasing labor productivity, technical reequipment of the enterprises, and improvement of management methods. During 1984-1985 alone labor productivity at state industrial enterprises increased, according to official figures, by almost 10 percent, the annual income of workers and employees

increased during 1981-1985 (that is, during the five-year plan as a whole) by a factor of more than 1.5, and that of the rural population—by a factor of more than 2. During the 6th Five-Year Plan the average annual income of workers and employees in cities and villages of the country per one worker increased from 762 yuans in 1980 to 1,176 yuans in 1985. During the same period the average income of peasants increased from 191 yuans to 400 yuans a year.

It would seem that the general economic indicators show the success of the latest transformations in the economic sphere. A deeper analysis, however, shows that one cannot yet speak of complete success of these transformations. It has become clear that during the course of the reforms far from all of the goals have been reached; many new management mechanisms did not work; and numerous new problems appeared along with the old ones.

The Chinese press names the excessively rapid growth of industrial enterprises as one of the serious "side" phenomena. A considerable proportion of state funds are spent on commercial activity that is practically uncontrolled by the state. Under these conditions there has been a significant increase in the number of semilegal middleman companies whose activity produces an advantage only for individual groups of people. There have been more cases of failure on the part of various organizations to fulfill the decrees of the CPC Central Committee, the State Council and other high management agencies. The effectiveness of their instructions has decreased, the attitude toward them has become more formal, and their interpretation is becoming more arbitrary.

A significant number of abuses in the economic sphere have frequently taken place under the cover of measures related to the reform. Local authorities and managers of enterprises have frequently raised prices illegally and allowed an unjustified overexpenditure of state resources; and speculation, theft, and bribery have become worse. All these phenomena could not but have a negative effect on the situation in the national economy.

The sharp increase in prices for many kinds of goods, the greater shortage of raw material and energy, the difficulties in the sphere of employment, the low rates of renewal of the technical base, the increased volumes of capital construction, the decline of the effectiveness of the utilization of foreign currency, the slow development of special economic zones, the growth of abuses in the economic sphere—this is far from a complete list of problems that will have to be solved in the next few years. It seems that their appearance was the direct result of the incomplete development of many provisions of the reform, the lack of a unified legal base that would regulate the activity of economic units, the poor coordination of the transformation, and shortcomings in the control mechanism.

The hopes the Chinese leadership placed in the effectiveness of market regulators of industrial development turned out to be excessive. It became obvious that the introduction of market levers into a planned economy requires careful preparation, progress in stages, constant control, and large-scale economic experimentation, which would make it possible to work out the most attractive theoretical constructs under realistic conditions. Otherwise there can be difficulties whose elimination will be excessively complicated and costly. Thus the opportunity granted to the enterprises to take out bank loans instead of subsidies, when there were no proper procedures for controlling the issuance of loans, led to a situation where many plants utilize these loans for excessive expansion of the scale of capital construction and unsubstantiated increase of wages and bonus payments. The volume of credit obtained in 1984 exceeded the 1983 level by 29 percent.

The right of the enterprises to keep part of their profit and utilize this money for material incentives produced a quite unexpected effect: the managers arranged real competition for increasing the volumes of bonus payments. At a number of enterprises the monthly sum of bonuses and additional payments even began to exceed the sum of wages. The overall sum of bonuses exceeded the amount of wages by almost 50 percent in 1984. The rates of increase of these payments considerably outstrip the growth rates of labor productivity and the volumes of industrial production. As a result, there was a sharp increase in the buying power of the urban population, which, under the conditions of the shortage, contributed to an unjustified increase in prices.

The weakening of state control over the activity of the enterprises made it possible for many of them at their own discretion to raise the prices for materials in short supply. In 1982-1983 the prices for cement exceeded state prices by 35 percent, steel—30 percent, timber materials—200 percent, and so forth. As a result, the "illegal" profits of these enterprises amounted to millions of yuans.

The amount of money in circulation increased by 15 percent during 1984 alone, and most of this was in the last quarter. The practically complete elimination of state control over prices for almost half of the kinds of agricultural and industrial products led to a situation where in 1984 prices of food products in the city increased by almost 50 percent, and in the country as a whole the price level rose by 11 percent. The state was forced to prolong the subsidizing of prices, the payment of other subsidies, and so forth. As a result, in 1985 as well the subsidies amounted to about one-third of the expenditures from the state budget.

In spite of the course taken in recent years toward reducing the volumes of capital construction, investments in this branch in 1985 increased by more than 40 percent while the plan was for 1.1 percent. There was a

clear "overheating" of the economy since the volume of industrial production in 1985 increased by almost 23 percent (1984—14 percent) while the plan was for 8 percent.

During 1985 the supplies of foreign currency decreased by more than one-third. Many directors of enterprises and leaders of provinces took advantage of the freedom of action they had been given and possibility of entering the foreign market for unsubstantiated purchases not only of equipment, but also of consumer goods. There was a sharp increase in the number of economic abuses. During 1983 alone the number of transactions linked with economic crimes reached 45,000, and the sum of thefts amounted to approximately 90 million yuans. The results of the introduction of special economic zones and territories that are open for direct foreign investments turned out to be discouraging in 1984-1985. Thus the leading economic zone of Shenzhen gradually became the center of contraband trade, illegal importation of goods, and currency machinations, but advanced industry that is oriented toward exports has not yet been properly developed there (Footnote 3).

As we can see, the attempt to activate economic life and increase the effectiveness of industry through market factors without careful preparation and experimental verification, while it had certain positive aspects, led to chaotic industrial growth, inflation, and the aggravation of numerous problems, including social ones. It became obvious that it was necessary to take measures for adjustment and to slow down the rates of restructuring of the economic mechanism. Even a year after the beginning (in October 1984) of the new stage of the reform, it was reduced to a significant degree. State agencies are exercising more control over the activity of enterprises. Control over bank operations has also become stricter.

These measures produced certain positive results—this is shown by the statistical data that characterize the development of the Chinese economy during the first 6 months of 1986. The growth rates in industry dropped from 23 percent (during a similar period in 1985) to 4.9 percent, the growth of prices slowed down to 5 percent, and the shortage of the trade balance decreased by approximately \$6 billion.

A certain stabilization of economic development makes it possible for Chinese specialists to predict the successful fulfillment of the 7th Five-Year Plan (1986-1990), whose assignments are extremely demanding. Thus during this period, while keeping the overall capital investments in fixed capital at the 1985 level, growth rates in industry should amount to an average of 7 percent per year, and in agriculture—6 percent. An increase of the GNP is also planned in the amount of 7 percent. State incomes during the five-year plan should amount to 900 billion yuans, that is, they should increase by 40 percent as compared to the 6th Five-Year Plan.

As materials from the Chinese press show, corrective measures do not mean a rejection of theoretical ideas. In the near future it is planned to move more carefully along the path of utilization of market forces and increased independence of enterprises. During the years of the 7th Five-Year Plan there is to be further research for an optimal combination of "plan and market," and economic experiments for developing individual elements of the reform will be continued. It is precisely in the gradual nature of the transformations that Chinese specialists today see the possibility of introducing new methods of economic leadership into practice.

With all the nonstandard nature of the solutions, difficulties, and problems revealed during the course of the reform, a study of the interesting, albeit largely contradictory, experience of economic transformations in the PRC provides rich material for analysis. There is no doubt that with the appropriate critical interpretation, this experience can be a useful source of ideas for restructuring management both in the USSR and in other countries of the socialist community.

#### Footnotes

1. According to estimates, in the PRC only one-third of the directors of enterprises have an adequate level of training for organizing effective leadership.
2. By the beginning of 1985 there were more than 10,000 enterprises that had been put up for rent for a period of up to 5 years.
3. In 1985 only 15-20 percent of the commodities produced at enterprises of the Shenzhen zone found their way to the foreign markets.

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**Work Losses Due to Illness Decrease**  
*18200005m Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian*  
No 8, Aug 87pp 205-215

[Article by A. A. Dregalo, candidate of philosophical sciences (Arkhangelsk): "Losses From Illness Decreased by a Half Million (Concerning the Experiment of the Arkhangelsk Pulp and Paper Combine)]

#### [Text] In Search of Personnel

The technical council of the Ministry of the Timber, Pulp and Paper, and Wood Processing Industry approved and recommended for introduction at other enterprises of the branch the system for personnel stabilization of the Arkhangelsk Pulp and Paper Combine. At this enterprise, as throughout the region as a whole, the

balance of labor resources has not been favorable so far: from year to year the influx of work force has been decreasing; there is negative migration in the city as well. But because of the introduction of this system they have managed to provide for a stable tendency toward reduction of personnel turnover. While in 1975 the coefficient of turnover amounted to 16.5, two five-year plans later it is 8.1. There has been a corresponding increase in the proportion of workers who work throughout the calendar year—from 8,000 to 11,000.

At the enterprise they devoted attention to the fact that while about 3,000 work days are lost from absenteeism each year, 30 times more are lost from illness. Let us note that this picture is typical of more than just this enterprise. According to data of the social security division of the Arkhangelsk Oblast trade union council, because of absenteeism, down time and leaves with the permission of the administration, each day 1,338 people do not work in the oblast, and because of diseases—this figure is more than 27,000, which is equal to the number of personnel of the two largest enterprises of the branch—the Kotlas and Arkhangelsk pulp and paper combines.

The damage in this case is exceptionally great. While the absentees simply failed to produce products which he could put out, the ill person consumed public funds allotted for public health, received his average wages and, of course, does not produce products. This is the economic side of the matter. But no less important is the human side: a close friend who has suddenly fallen ill, a comrade in work, causes additional experiences and the rest of his comrades do not work as well. How does one change this depressing situation under the conditions of the production collective? At least three circumstances should be taken into account here.

The first is the high level of road-transportation, industrial, and household injury. Unfortunately, so far it is not possible to avoid either road-transportation or production or household injuries. And they comprise a serious problem, not only socially but also economically: each case of disability that is related, for example, to fractures cost the state an average of 11,000 rubles a year. In the USSR injuries occupy second place among causes of death after diseases of the circulatory organs. This is a most important social problem.

The second circumstance is composed of regional climatic problems. Under the conditions of the North, for example, people's health is significantly influenced by climatic peculiarities. Lowering of temperature, disturbance of the natural lighting conditions, the higher frequency of electricity storms, the high cyclone activity, sharp drops in barometric pressure, the frequent change of weather, ultraviolet "cold" and others.

The third circumstance has to do with the specific nature of the enterprises. Each production has its own peculiarities which can lead to occupational diseases or exert a general negative influence on man's health. For instance,

in pulp and paper production for every ton of pulp treated by the sulfate method there is a significant dose of gas discharges that are harmful to the health: 824.1 grams of melimercaptan, 574.8 grams of dimethylsulfide, and 194.2 grams of hydrogen sulfide. When pulp is processed from deciduous wood, this volume of discharges increases by 80 percent (Footnote 1).

Thus the general, regional and specific production factors that influence people's health must be taken into account when planning disease prevention. In principle this is taken into account at each enterprise to a greater or lesser degree. In Arkhangelsk Oblast there are 16 sanatorium-preventive medical facilities which can accommodate 1,875. There are also many recreation bases, plant polyclinics, and health points here. Many of them, such as the sanatorium-preventive medical facility of the Kotlass Pulp and Paper Combine, the plant health resort of the Solombalsk Pulp and Paper Combine and others show the fairly high effectiveness of preventing and treating diseases. Yet the immense reserves that exist in this sphere force us to search for new ways of reducing illness.

### Prevention Is Less Expensive Than Treatment

Traditionally disease prevention has been promising in this search because it has long been known that prevention is much less expensive than treatment. The model for this work is simple: general medical examinations for workers, the discovery of diseases in early stages, prompt treatment, and then medical observation and outpatient assistance. But it is not so simple to carry out this task. Try, for instance, to solve even the simplest problem—to get all workers to come in for medical examinations. Practice shows that even X-ray examinations can be conducted only after order that include foremen and shop chiefs.

Yet it is well-known how many difficulties are caused by treatment of tuberculosis that is discovered late. By the same token, people go to the dentist most frequently when it is necessary to take painkillers. Prevention through exercise frequently begins when dangerous signals of heart disease appear. A questionnaire circulated by the Central Scientific Research Institute of Sanitary Education of the Ministry of Public Health in seven cities of the country showed that of the 2,780 respondents, 20.1 percent evaluated their health as good, 66.7 percent—satisfactory, and 13.2 percent—poor. Moreover, morning exercises are done regularly for health by twice as many in the first group as among those who evaluated their health as satisfactory, and almost 3 times as many as those in the group with a poor self-evaluation. Indeed, we are not taking care of what we have. Moreover, strange as it may be, the people who evaluated their health as good go to the doctor more frequently than those who have satisfactory health, although the latter comprise the majority in the selection (Footnote 2). Consequently, today it is not enough merely to publicize

the need to engage in physical exercises. It is necessary to have a motivation that is capable of breaking inertia in places where even the course of an order is not strong enough.

At the Arkhangelsk Pulp and Paper Combine initially they decided to use the force of example. It was decided to examine the managers of shops, productions, and the combine. Although such an examination subsequently turned out to be extremely to the point—of the 80 people examined there was not a single worker who did not have some illness—it was very difficult to get them to take preventive examinations. Each one had urgent affairs which unless they were dealt with, in their words, the combine could shut down, or there were family reasons.... It is understandable that there was no point in extending this method to all the workers. Then....

Few people at the combine understood the point of the order concerning the construction and outfitting of saunas in the shops. They decided it was a caprice of the managers, indulgence, a temporary fancy. They thought as follows: very little can happen in a shop when there is a sauna nearby. One person could get too hot, another, which is better, might come to work with a bottle. But it was not received as a crowning success.

But an order is an order. The time passed and soon at the cardboard factory, at the station for biological purification and industrial wastes there were real saunas with showers, sweating rooms, and a small swimming pool. After the shift was over, they could take the heat, sweat, and swim in the pool as long as their hearts desired. People from other shops began to take notice and guests were invited. Other managers were affected, and workers can criticize managers, the more so since there was an order concerning this. Soon saunas were established in other productions. Then the sportsmen and physical culture enthusiasts of the combine began to work out. They know better than others what health centers are, for instance, the Minsk Palace of Sports, the one at the Minsk Plant for Facing Slabs, at the Plant imeni I. A. Likhachev, and at other well-known enterprises.

The popularity of saunas is not decreasing. And when the managers can see a direct connection between the appearance of these facilities and the reduction in the number of colds, the order was no longer required: there are about 40 saunas now at the enterprise.

The next stage of preventive medical work includes a universal clinic system for workers with the participation of an oblast oncological dispensary—the grains planted in the collective with the creation of saunas produced shoots. In a short period of time medical workers were able to perform an immense volume of work which previously had not seemed realistic. Preventive work, of course, cannot be reduced to the creation of saunas. Subsequently at the saunas, where it was possible, they began to create rooms for psychological unwinding.

Let us go into one of them, in timber preparation production. The first timber preparation shop is the oldest at the combine. It was constructed before the war. The working conditions here are difficult: it is wet, noisy, drafty, and it involves heavy physical labor. It is becoming more and more difficult for the personnel workers to find workers for this shop. And the veterans who came here way back in the 1940's are now going on pension. The modernization of the equipment which is now taking place in the shop has not yet done much to change the content of the labor on the flowline—it is still necessary to separate the balances of the bark strippers by hand, to push the log through the slot, and to gather up the pieces of wet bark. And here is the rest room. You open the door and it is as though you enter a different world. There is complete sound insulation, soft light, rugs, armchairs, a table with Ukrainian decorations, a samovar, and attractive service. Behind a partition is an installation for oxygen cocktails. In a separate room is greater sound installation. There are comfortable chairs, color slides with glimpses of living nature, and musical fountains. Psychotherapy sessions are held here.

We spoke with an elderly worker who had dropped in for a minute while the flowline was being prepared in order to take an oxygen cocktail.

"We like this room," she said. "We try to drop in here before the shift and after work. We take oxygen—we get an appetite, it is easier to breathe and we do not leave work so tired. This is a good idea."

And here in the same room they drink fortified tea and go through various health procedures.

But the combine today of preventive work proceeds along the line of increasing the protective functions of the organism, improving sanitary domestic conditions in production, strengthening dietetic nutrition, expanding the network of dining rooms and snack bars that use products obtained from the subsidiary farm of the enterprise, making their recreation of the workers more active, and developing mass participation in sports. A complex of measures is being conducted for reducing illness of children. Much that is interesting and instructive can be said about each of these areas. But here we shall discuss one principally new and highly effective one—rehabilitation of ill and disabled people.

### **Toward Rehabilitation—Through Our Own Experience**

The manager of the enterprise came to the idea of rehabilitation through his own experience. He had an accident and broke a leg. Months spent in a hospital bed and the desire to complete the process of therapy and return to work gave rise to a purely practical question: Is it possible to accelerate treatment? And the physicians turned to rehabilitation.

Rehabilitation usually means restoration of the damaged functions of the organism and the ability to work on the part of patients and disabled persons. This is an entire complex of medical, psychological, vocational, and socioeconomic measures. The best developed and most traditional is medical rehabilitation which makes extensive use of medication, physiotherapy, therapeutic physical culture, mechanical therapy, and sanitary-health resort therapy. Medical rehabilitation tries to include methods for restoring the health in the treatment process as early as possible. An exceptional amount of attention here is devoted to training medical personnel who sometimes have to deal with people who have lost their belief in the possibility of returning to work and life in the society.

One must say that today the problem of rehabilitation has become the subject of an in-depth study by the world health organization (Footnote 3), world congresses are devoted to it (Footnote 4), it has gone beyond the framework of medicine, and scientists are trying to clarify its position in ecology (Footnote 5). It is remarkable that the restoration of the last functions of the organism as a result of traffic accidents, injury, and diseases and the return of a person to society have become a part of the concerns of industrial enterprises as well.

More and more is being said about industrial rehabilitation—the complex of organizational and technical measures for restoring labor and occupational skills. The experience of the medical experts of the Gorkiy Automotive Plant is widely known (Footnote 6). With plant funds they constructed inpatient divisions for restorative treatment with 60 beds where they had therapeutic and diagnostic offices, divisions for mechanical and physical therapy, swimming pools, and shops. Then an outpatient center for rehabilitation to accommodate 200 was put into operation. The organizers set as their goal to eliminate the consequences of diseases as quickly as possible, and to return to the individual his lost skills and ability to work. So from work games, which were practiced previously in clinics, where they imitated various movements in special circumstances, the patients changed to participation directly in the labor process, in a special shop, and in individually adapted work places.

Psychological confidence in the possibility of returning to one's work place and entering into the labor life of one's collectives was one of the basic factors in reducing the time periods of illness and reducing the physical and spiritual sufferings of the individual.

A measure that was profoundly humane in its essence turned out to be economically advantageous: in 4 years thousands of patients passed through the shop for restoration therapy. Losses of work time decreased by 10,000 days a year and the economic effect amounted to 230,000 rubles a year. This important socioeconomic experiment was approved by the RSFSR Ministry of Public Health and recommended for introduction.



And now let us drop into the rehabilitation division located in the Novodvinsk City Hospital, constructed by the Arkhangelsk Pulp and Paper Combine. A soft carpet runner stretched along the corridor. Pictures, flowers, music, color television, quietude, coziness, politeness and attention to everyone from the personnel. Let us become familiar with the long list of procedures offered to the visitors: magnetic therapy, oxygen therapy, electric sleep, psychotherapy, hypnosis, showers, baths—paraffin-ozerite-naphthalene, foam, medicinal, steam showers, massage, saunas, and underwater spine extension. There are dozens of various procedures.

Let us look at one of them which is familiar to many people. We go through an underground passageway and end up in the therapeutic sauna. There is a shower, a dressing room, and a sweatroom. There is an hourglass for 3 minutes. The temperature is +75. Not very hot? No more is needed, after all, the sauna is therapeutic. An ordinary ventilator has been adapted to warm individual parts of the body. It is easy to breathe in the sauna because oxygen is fed in and the air is ionized. Then—the pool, with water the color of a sea wave, an underwater massage and tea with vitamins. Then rest, peace, and music. The vessels are exercised from the change in temperature, the breathing is regulated, the acidity of the gastric juices is reduced, nervous tension, apathy, boredom and uneasiness are removed—this sauna can do a lot.

What is this, prevention or therapy? It is both. This is precisely the originality of the system, which was developed and introduced by medical experts of the hospital and the managers of the enterprise: the procedures are taken not only by those who need to have functions restored after injuries, as is done at the Gorkiy facility, but by everyone who is an inpatient in the hospital. If one takes into account that 90 percent of the patients in the hospital are workers of the Arkhangelsk Pulp and Paper Combine, one can understand why the management of the combine and the city hospital are practically equally concerned about its affairs. Specialists can ask the question of whether or not there is any point in extensively interpreting restorative therapy and combining it with prevention. The question, of course, is still debatable. But this is not the essence. Research and the result are important.

"Before the opening of the rehabilitation complex," the hospital's head physician, V. V. Sementsov, explains to me, "only 7 out of 100 patients went through therapy in this division. Today more than 80 percent do. Soon everyone will go through the complex for restoration therapy. The results are obvious. For example, patients sent from the surgery section after a gastric resection in 1980 remained in therapy for an average of 163 days each. Today this is 110 days. There are also reductions for other diseases. And here are the figures for the traumatological division: the time periods for treating knee fractures decreased by 21 days in 2 years, fractures of the radius—65 days, and so forth.

Simple arithmetic shows that the prevented economic harm in the hospital amounts to almost a half-million rubles a year. Considerable money was saved from the social security fund. Losses associated with the absence of workers in production were reduced. The cooperation between medical experts and production workers made a weighty contribution to preserving labor resources!

This cooperation is not ending with the introduction of the next section of the hospital using funds of the enterprise. The manufacture of nonstandard equipment and various innovations in the divisions, the renewal of the furniture, and the decoration of the wards—in everything one can see the alliance between the production workers and the physicians. A unity of goal determines a unity of actions. They are thinking about the future here: documentation has been prepared for the construction of a separate inpatient center for restorative therapy in the city hospital and for the organization of a second center in the sanatorium-preventive medicine facility; a center has been equipped for restorative therapy for children in the Severnaya Ritsa Pioneer Camp; and the question of creating a year-round recreation base at the combine's Pioneer camp which is being constructed on the Azov Sea is being resolved. Moreover, many veterans of labor and war as well as disabled people have become the subject of special concern of the entire rehabilitation system.

"I have been ill for a long time," writes V. F. Volkova to the editorial staff of the local newspaper. "But the bad news does not come alone—my husband was paralyzed at work and he became an invalid of the first group. It became difficult to care for him. But then one day the door opened and three people in white coats came in.... They were interested in my husband's health, asked him everything and prescribed treatment. They began to do massage and other procedures regularly. It is remarkable but the brigade physicians have the good sense to visit people who need special attention and assistance."

Many veterans of war and labor express words of profound gratitude to the organizers of in-home restorative therapy.

There is special meaning in this approach to people. All kinds of things happen to a person. An exceptional feature of the socialist way of life is each person's belief in the future. Even when the most unpleasant thing happens he is confident that he will not be left to himself: people will be concerned about him in the hospital, at the enterprise, in the family, and in the labor collective. Yet it is known that educators consider the first sign of a collective to be the feeling of protectiveness in each member. Concern for the health of people, the insurance of confidence in the future, and attention to those who have honorably fulfilled their military and labor duty—this might be more effective for increasing the prestige of the enterprise and for developing and strengthening labor collectives!



## Summing Up the Results

The Arkhangelsk Pulp and Paper Combine, while fulfilling the plan for socioeconomic development for the 11th Five-Year Plan under the section "Public Health," accumulated experience in realizing social reserves. As at many other enterprises of the country, the high effectiveness of social measures was proved here. In what directions can the development of the "health" program proceed at those enterprises that are trying to utilize this experience? It seems to us that they are the following:

**Strengthening of the material base for therapeutic institutions.** This presupposes the participation of the enterprises and the acquisition of special equipment and the manufacture of nonstandard equipment in the form of stands and training mockups, and in the construction of new divisions for rehabilitation for public health agencies that engage directly in restorative treatment of workers of the given enterprise.

**Participation in production rehabilitation.** This includes assistance to existing state institutions in organizing special work places directly at the enterprises, in the hospital or in the home with the participation of rehabilitated patients and disabled persons in the production of products.

**Participation in home rehabilitation.** In addition to traditional rehabilitation applied in therapeutic institutions where the patients restore lost skills in training mockups, stands and adaptations, the enterprises engage in improving housing and domestic conditions for this category of workers, providing them with means of communication, manufacturing individual adaptations for self-service, acquiring means of locomotion, and so forth.

**Participation in social rehabilitation in the narrow sense.** This envisions participation of the collective in measures directed toward social integration of the rehabilitated people. We are speaking about moral-psychological support, assistance in communicating with the external world and continuing education, and work with the population in order to improve attitudes toward disabled people.

The connection between rehabilitation and the system of prevention. Within the framework of the special council on prevention and rehabilitation of patients which, as at the Arkhangelsk Pulp and Paper Combine, can be headed by the general director of the enterprise, measures related to physical culture and sports, recreation, and medical prevention are developed and implemented. Moreover, all of them have a common strategic direction—strengthening the health of the workers, and as a result of this, increasing the social potential of the collective.

How effective are the "health" programs? They can be regarded from the standpoint of the economy and the social effect. In the former case if, say, at the Arkhangelsk Pulp and Paper Combine because of diseases an average of 574 people do not work in 1980, 2 years later this figure was 322, and the economic damage saved for the state amounted to about a half-million rubles a year. And during the five-year plan the enterprises recouped almost all the money they invested in public health.

The social effect is manifested in the fact that the enterprise, concerned about the workers, demonstrates the highly humane nature of social planning in our society. The inclusion of the enterprise in the system of social rehabilitation changes the way of life of the patients and disabled persons, increases the income of family members, normalizes the deviation from existing norms of family relations caused by the new position of the patient or disabled person, has a positive influence on the stabilization of family-physicians relations under the new conditions, and provides for including these people in social life.

The organization of rehabilitation brigades in Novodvinsk and the periodic visits from doctors to veterans of war and labor and invalids who have been confined to their beds for years exert an immense educational influence on the immediate social environment, on relatives who are caring for the patients, and on the patients themselves.

It is very important that future workers—schoolchildren and students—participate in the noble mission of concern for man in his place of residence. One of the most humane civic feelings—compassion and the experience of another's pain—is instilled at a young age. Having children encounter another's misfortune places a barrier against the kind of egoism that flourishes sometimes.

## Footnotes

1. "Hygiene, Medical Service for Workers and Sanitary Protection of the Environment With the Production of Pulp," Materials of the Scientific Session of the Leningrad Sanitary-Hygienic Medical Institute, 27-28 May 1968, ed. by Prof F. N. Subbotin, Leningrad, 1968.

2. Leranskiy, D. N., Kogan, V. Z., et al., "Several Peculiarities of the Attitude Toward the Health of People distinguished by their self-evaluation of their physical and psychological condition, in the book "Otdelnyye aspekty propagandy meditsinskikh i gigiyenicheskikh znaniy" [Individual Aspects of Publicity of Medical and Hygienic Knowledge], Moscow, USSR Ministry of Public Health, 1979, pp 9-11.

3. "Disability Prevention and Rehabilitation," report of the Committee of WHO Experts on Rehabilitation and Prevention of Disability. Theories of technical papers, WHO, Geneva, 1983.

4. Filatov, V. I., "14th World Congress on Rehabilitation of Disabled Persons," ORTOPEDIYA, TRAUMATOLOGIYA I PROTEZIROVANIYE, No 3, 1981, p 74.

5. Kabanov, M. M., "Ecologization of Medicine and the Concept of Rehabilitation of Patients," PSIKHOLOGICHESKIY ZHURNAL, 1982, Vol 3, No 6, p 106.

6. IZVESTIYA, 18 June 1981.

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**New Book Publications Announced**  
18200005n Novosibirsk *EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian*  
No 8, Aug 87pp 216-217

["New Books"]

[Text] The Nauka Publishing House will publish the following books in the first quarter of 1988:

Atarov, N. Z., "Territorialnoye razvitiye nezhotrastsevykh proizvodstvennykh kompleksov" [Territorial Development of Interbranch Production Complexes], 10 printer's sheets.

Vikhlyayev, A. V., "Povysheniye effektivnosti otnosheniy raspredeleniya" [Increasing the Effectiveness of Distribution Relations], 10 printer's sheets.

Zorkaltsev, V. I., "Metody prognozirovaniya i analiza effektivnosti funktsionirovaniya sistemy toplivosnabzheniya" [Methods of Predicting and Analyzing the Effectiveness of the Functioning of the Fuel Supply System], 9 printer's sheets.

"Intensifikatsiya i effektivnost sotsialisticheskogo proizvodstva" [Intensification and Effectiveness of Socialist Production], 30 printer's sheets.

Kronrod, Ya. A., "Planomernost i mekhanizm deystviya ekonomicheskikh zakonov sotsializma" [Planning and the Mechanism for the Effect of the Economic Laws of Socialism], 20 printer's sheets.

Nikitin, V. S., "Teoriya i metody prognoznno-ekonomicheskoy otsenki mineralno-syryevykh sursov" [Theory and Methods of Prognosticatory-Economic Evaluation of Mineral-Raw Material Resources], 8 printer's sheets.

"Sbalansirovannost i effektivnost" [Balance and Effectiveness], 20 printer's sheets.

Khromov, P. A., "Ocherki ekonomiki dokapitalisticheskoy Rossii" [Essays on the Economy of Precapitalist Russia], 18 printer's sheets.

"Ekonomicheskii mekhanizm effektivnogo ispolzovaniya resursov potrebleniya" [The Economic Mechanism for Effective Utilization of Resources of Consumption], 15 printer's sheets.

The books can be ordered in all bookstores of the country and also in the store "Kniga-Pochty" at the address: 117192, Moscow, Michurinskiy Prospekt, Dom 12.

In 1988 the publishing house Ekonomika will publish the following books on USSR economics:

### Publications for Which the Filling of Orders is Guaranteed

Amirov, Yu. D., "Nauchno-tekhnicheskaya podgotovka proizvodstva" [Scientific and Technical Preparation of Production], 16 printer's sheets.

Andrianov, V. M., Sokolova, N. A., and Uskov, M. Ye., "Kompleksnoye ispolzovaniye syrya v promyshlennosti" [Comprehensive Utilization of Raw Material in Industry], 15 printer's sheets.

Bobrovnikov, G. N., and Klebanov, A. I., "Kompleksnoye prognozirovaniye sozdaniya novoy tekhniki" [Comprehensive Prognostication of the Creation of New Technical Equipment], 15 printer's sheets.

Krolli, O. A., "Materialno-tekhnicheskoye snabzheniye; resursosberegayushchaya deyatel'nost'" [Material-Technical Supply; Resource-Saving Activity], 12 printer's sheets.

Lebedeva, L. P., "Territorialnyye programmy: Materialnoye obespecheniye" [Territorial Programs: Material Support], 10 printer's sheets.

Pavlova, V. P., and Finkelshteyn, A. L., "Novyye usloviya khozyaystvovaniya: Opyt, razvitiye, problemy" [New Conditions for Management: Experience, Development, Problems], 14 printer's sheets.

Praude, V. R., "Proizvodstvo i obrashcheniye tovarov narodnogo potrebleniya: Khozyaystvennyy mekhanizm upravleniya" [Production and Circulation of Consumer Goods: The Economic Mechanism of Management], 15 printer's sheets.

Proskuryakov, V. M. and Samuylyavichus, R. I., "Effektivnost ispolzovaniya toplivno-energeticheskikh resursov: Pokazateli, faktory rosta, analiz" [Effectiveness of the Utilization of Fuel and Energy Resources: Indicators, Growth Factors, Analysis], 12 printer's sheets.

Satanovskiy, R. L., "Metody snizheniya proizvodstvennykh poter" [Methods of Reducing Production Losses], 17 printer's sheets.

Sedegov, R. S., Orlova, N. M., and Sidorov, Yu. I., "Optimizatsiya informatsionno-ekonomicheskoy sistemy predpriyatiya" [Optimization of the Information-Economic System of the Enterprise], 15 printer's sheets.

"Chelovecheskiy faktor i uskoreniye sotsialno-ekonomicheskogo razvitiya" [The Human Factor and Acceleration of Socioeconomic Development], 20 printer's sheets.

Chichkanov, V. P., "Dalniy Vostok: Strategiya ekonomicheskogo razvitiya" [The Far East: The Strategy for Economic Development], 20 printer's sheets.

Edelman, V. I., "Nadezhnost tekhnicheskikh sistem: Ekonomicheskaya otsenka" [The Reliability of Technical Systems: An Economic Evaluation], 12 printer's sheets.

#### Publications Printed Within Planned Editions

Aganbegyan, A. G., "Sovetskaya ekonomika—Vzglyad na budushcheye" [The Soviet Economy—A Look Into the Future], 17 printer's sheets.

Blekherman, N. Kh., "Gibkiye proizvodstvennyye sistemy. Organizatsionno-ekonomicheskiye aspekty" [Flexible Production Systems. Organizational-Economic Aspects], 12 printer's sheets.

Valitov, M. G., "Sotsialisticheskoye sorevnovaniye: mekhanizm ispolzovaniya" [Socialist Competition: The Mechanism for Utilization], 12 printer's sheets.

Kolesnichenko, A. L., "Khozyaystvennyy mekhanizm: Perestroyka beret start" [The Economic Mechanism: Perestroyka Is Getting a Start], 10 printer's sheets.

Lapusta, M. G., and Rabayev, V. V., "Luchshiy kontroller. Rasskazy o khozyaystvennom raschete" [The Best Controller. Stories About Cost Accounting], 10 printer's sheets.

Rzhevskiy, V. A., "Ekonomicheskiye metody khozyaystvovaniya: Novyye podkhody k znedreniyu" [Economic Methods of Management: New Approaches to Introduction], 5 printer's sheets.

Sarkisyan, G. S., "Narodnoye blagosostoyaniye v SSSR" [Public Welfare in the USSR], 20 printer's sheets.

Sdobnov, S. I., "Uskoreniye: Sushchnost, puti, tempy" [Acceleration: Essence, Paths, Rates], 8 printer's sheets.

"Sotsialisticheskaya predpriimchivost" [Socialist Enterprisingness], 12 printer's sheets.

"Strategiya uskoreniya: Teoriya, puti realizatsii" [The Strategy of Acceleration: Theory and Paths of Realization], 18 printer's sheets.

"Fondy ekonomicheskogo stimulirovaniya" [Economic Incentive Funds], 5 printer's sheets.

Chekhlov, N. I., Ignatov, V. F., and Lipsits, I. V., "Tsena na ekrane komputera" [The Price on the Screen of the Computer], 5 printer's sheets.

Yakovets, Yu. V., "Uskoreniye nauchno-tekhnicheskogo progressa: Teoriya i ekonomicheskiy mekhanizm" [Acceleration of Science and Technical Progress: Theory and Economic Mechanism], 25 printer's sheets.

Orders are accepted in all bookstores.

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#### Skit Satirizes Official Documents

18200005o Novosibirsk *EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO)* in Russian No 8, Aug 87 pp 218-221

[Skit by Yevgeniy Vishnevskiy and Vadim Sukhoveikhov (Novosibirsk): "Documents"]

[Text] (The boss is working at his desk. A visitor comes in)

Visitor: Hello. Do you need new workers?

Boss: Yes, we do.

Visitor: Very good. Here is my application.

Boss: Well, let us talk. Sit down. Tell me a little about yourself.

Visitor: Here you are. (He gives him his book-document).

Boss: Excuse me, I do not understand.

Visitor: This is a document. Everything about me is written there.

Boss: Aaah.... (He looks at the document.) Soo, I understand. And where did you work before? You understand that you have this specific...

Visitor: I understand. Here, here you go (he gives him another book-document).

Boss: Very good. (He looks at the book.) And what else do you have?

Visitor: Aah, here you go. (He gives him a third book-document.)

Boss: Excellent. And is that all?

Visitor: What do you mean, I have all my documents here. Have another one. (He gives him a fourth book-document.)

Boss: (Looking for a long time at the documents of the visitor, he obviously likes them): such remarkable documents, I cannot tear my eyes away.... Such a remarkable person.... I, I must admit, am even flattered.... After all, you will be working under my leadership.... Very, very glad to meet you. But you probably also want to know something about me, right? Anyway, under my leadership.... Take a look, please. (He places his own documents on the desk. They are exactly four of the same books. The visitor looks at them with interest.) Well, do you like my documents?

Visitor: They are excellent. (The visitor and the boss shake each other's hands. The boss takes four books from the desk and wants to put them in his pocket.) Excuse me, but you took mine. It seems....

Boss: Yes? I had four. (He counts the book-documents.)

Visitor: (Shrugging his shoulders): I also had four. The boss and the visitor (they look at the book which the boss is holding in his hands): Of course, these are mine! (they looked at one another and then at the book—documents that I left on the desk). No, these are mine!....

Boss: But where are mine?

Visitor: Mine—are these yours or mine?...

Boss: Perhaps we will find out from the contents?... Mine has entries, descriptions, round type....

Visitor: I have entries, descriptions, round type....

Boss and Visitor: (They open up one of the book-documents, which the boss is holding in his hands and read): I have been working for a long time, I have managed my work.... (Then he opens one of the book-documents lying on the table): In life I am modest, morally upright...

Boss: (He smiles, hitting his forehead with his hand): Yes, I have my photograph in there: a striped suit, a dark tie, a slanting part, a firm gaze.... (pause). Let us remember everything in order: How you came in, how we began to show our documents....

Visitor: You were sitting in this chair.... I gave you my documents, and you spread them out here.... Or here? (remembering, they walk around the table spreading the book-documents out in various ways and finally becoming confused)—wait, wait. Where did you sit in the very beginning: here or here?

Boss: It seems that here...or there? In general, somewhere here! (They exchange places and look at one another. Then each grabs "his own" documents.)

Visitor: (He looks at his documents): I, is that I, or I—is that you?...

Boss: It cannot be, really, that I am you! (He falls into thought)—no, no, that cannot be. I—am I.

Visitor: But what are you? You are I! I understood that immediately, as soon as I came into your office. (The visitor shakes the boss's hand. Each takes "his own" documents and stops indecisively. The personnel worker comes in.)

Personnel Worker: Well, has nobody come? We need people very much! There is nobody to work.

Boss and Visitor: What do you mean, he came.

Personnel Worker: Excellent. Give me his documents.

Boss: Here, help yourself (he gives the personnel worker four book-documents).

Personnel Worker: Whose documents are these?

Boss: Those are our documents.

Visitor: Here are some more. (He gives him four more books.)

Personnel Worker: So anyway, whose documents are these?

Boss: Ours.

Visitor: Ours and yours.

Personnel Worker: Mine?

Visitor: Yes, and yours.

Personnel Worker: (Laughing): Mine—are here! (He pulls out four identical documents and places them on the desk.) Here are mine!

Visitor: (He opens up one of the books and reads): I have been working for a long time, I have managed my work.... (He opens another and reads): ...In daily life I am modest, morally upright.... (He laughs.) You mean you say these are yours?

Personnel Worker: Yes!

Visitor: Only yours?

Boss: Yours and ours! (He takes the personnel worker's documents and puts them in the common pile.)

Personnel Worker: Allow me to take my documents.

Visitor: Please, pick them out. (The personnel worker looks for his own documents in torment.) Well, what, who are you?

Boss: (To the personnel worker): Listen, maybe I am you, and not he?

Visitor: Get out of here!

Personnel Worker: Well, do you mean I am not I?

Boss: I never thought of that either....

Personnel Worker: Then explain to me who I am?

Boss: But why to you?

Personnel Worker: But I must take my own documents.

Visitor: All of this is very simple! You are I-he-they, in a word, we are we. The main thing is that everybody gets the same. (They take the book-documents and deal them out like cards.)

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### **Economic Laws Satirized**

18200005p Novosibirsk *EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA* (EKO) in Russian No 8, Aug 87pp 221-222

[Article by A. Chubinskiy (Kiev): "Laws of Anti-Economics"]

[Text] Law of Division of Responsibility

If one person is guilty, one person is responsibility. If two people are guilty the inferior is responsible. When everyone is guilty, nobody feels responsibility.

### **Axioms of Quality**

1. It will pass this way. It is not for export....

2. If a product for the foreign and domestic market is manufactured under absolutely identical conditions, in the batches for the domestic market there must be defects.

### **Law of the Waiting Line**

Of two identical waiting lines, the one that moves faster is the one you are not in.

### **Basic Principle of Leveling**

He who has worked well earns good money. He who has worked poorly earns fairly good money.

### **The Rule of the Three Pine Trees**

If a buyer has acquired a malfunctioning or defective item in the store, during the warranty period he can easily be shuffled between the store, manufacturing enterprise, and repair service.

### **Law of Waste-Free Technology**

Defective work in one workplace is a semifinished product in another workplace.

### **Law of Exceptions**

The growth of exceptions is directly proportional to the growth of rules.

### **Consequence of the Law of Exceptions**

Willfully increasing exceptions leads to incarceration.

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**END**